Leadership Auburn – 2012

Wayfinding Signage

Master Plan

May 14, 2012

Leadership Auburn – 2012

Class Members

Nick Abrahamsen	Vitas Insurance
Evon Basque	Retired (Placer County)
Suzi deFosset	The Gathering Inn
Joe Fecko	Auburn Recreation District
Rita Holmes	Retired (General Motors Corp.)
Amy Lind	City of Auburn
Jocelyn Maddux	jbrandmarketing
Ethan O'Hagan	Old Town Pizza
Luke Parnell	Community 1st Bank
Colleen Sands	Retired
Kent Suemnicht	Thrivent Financial for Lutherans
Dolores "Dee" Turner	New Mourning Counseling Center
Randy Wagner	Retired (Hewlett-Packard)
Kerri Walker	Seniors First
Dave Werkley	Graphic Artist
Jackie Weston	Auburn Printers & Integrated Marketing

SECTIONS

BACKGROUND

DESIGN

CONTENT

LOCATION (Matrix)

LOCATION (Slides)

FUNDING

COMMUNITY INPUT

RESEARCH

Background

Leadership Auburn is a program designed and hosted by the Auburn Chamber of Commerce. The program is intended to identify and empower current and future leaders from all segments of the community to develop broad knowledge and experience, and help create a spirit of cooperation to effectively address future community challenges. The culmination of each class is marked by the identification and completion of a class project that improves the Auburn area.

The project selected by the 2012 class of Leadership Auburn is the development of a master plan to update the network of wayfinding signs within the city limits of Auburn. The plan addresses suggested design concepts, locations and content in an effort to improve the branding, effectiveness and cohesion of the current wayfinding sign network.

Situation Statement

Wayfinding signage is a necessary part of any city's image and an integral part of directing visiting traffic to the areas of the city that are of interest. The current wayfinding signage was designed and built 14 years ago. While fresh and effective when first implemented, it is clear that the current sign network is in need of updating. The current signage is outdated, inconsistent and suffers from "audience fatigue."

Objective

Create a master plan for new and updated wayfinding signage within the Auburn City Limits. The goal is to highlight activities and opportunities that Auburn has to offer and direct both residents and visitors to those locations, thereby increasing the appeal of Auburn and encouraging pass-through travelers to stop and visitors to stay longer. This plan would ultimately improve the business climate and revenue base for the City.

Proposed Solution

The City of Auburn's Streetscape project provides a common theme for redevelopment within the City. Using this theme as a guide, this new master plan serves to improve the cohesion among signs and to update and modernize the overall design, enhance the content and to recommend more advantageous locations.

The following sections include concept design drawings, a sign index and a detailed explanation of each recommended sign and whether it is a new sign, a sign that should be replaced or a sign that should be eliminated. Material cost estimates and construction options are also included along with potential funding sources and research materials that helped the class determine the ultimate recommendations included in this report.

Assumptions & Limiting Conditions

- This report and recommendations contained herein address only the established wayfinding signage within the City Limits of Auburn identified as the existing "brown" signs and prospective locations that are not currently covered by said signage.

- The report addresses recommended design concepts, locations and sign content as well as provides costing information for the respective signs recommended but does not endeavor to determine construction and installation costs as it is assumed that third party will complete this aspect of the project at a later date.

- Within the City and greater Auburn area, there are directional and informational signs associated with specific purposes. These signs are not addressed as they are considered outside of the purview of this report and there are no recommendations made as to the functionality or disposition of these signs.

- The signs proposed are within the parameters of the City's applicable sign ordinance with respect to design, materials and physical attributes.

- It is legally permissible to build the recommended signs at the respective recommended locations.

- At the locations addressed and recommended, there are no hidden or unapparent conditions of the property, subsoil, or structures, which would render them unusable.

- Prior to construction and installation all recommendations would need to be vetted and approved by the appropriate City personnel and other necessary parties.

- Any photograph, sketch or drawing contained in this report may show approximate dimensions and are included to assist the reader in visualizing the recommended signs in place. There has been no survey of the locations recommended.

DESIGN

TYPE 1

Location: City Hall

The Type 1 sign was designed as a hybrid of a monument-type sign and traditional way-finding signs. Its purpose is to welcome people to Auburn and highlight or advertise the general activities and attractions that make Auburn special. This sign would be viewed from both cars passing by and people walking along the street.

TYPE 2

Locations: Various points around Downtown and Old Town Auburn (Business Districts)

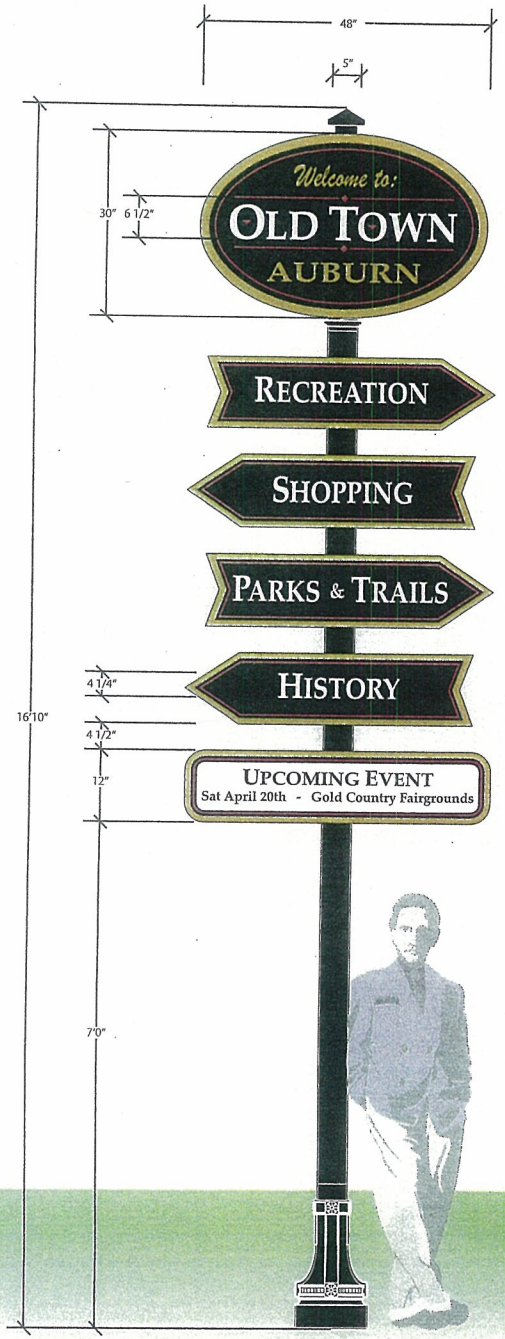
Type 2 signs have a more whimsical element and mimic the streetlamps in the Streetscape Design. These signs are designed with the flexibility for either way-finding or advertising depending upon their location and content.

TYPE 3-7

Locations: Various points around the City (outskirts, more residential/mixed areas)

Type 3-7 signs are designed primarily for practical, directional, way-finding only.

TYPE 2 SIGNS



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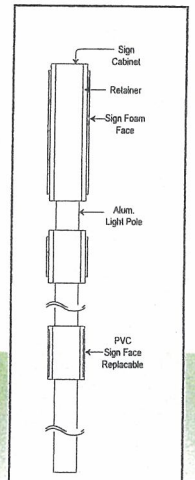
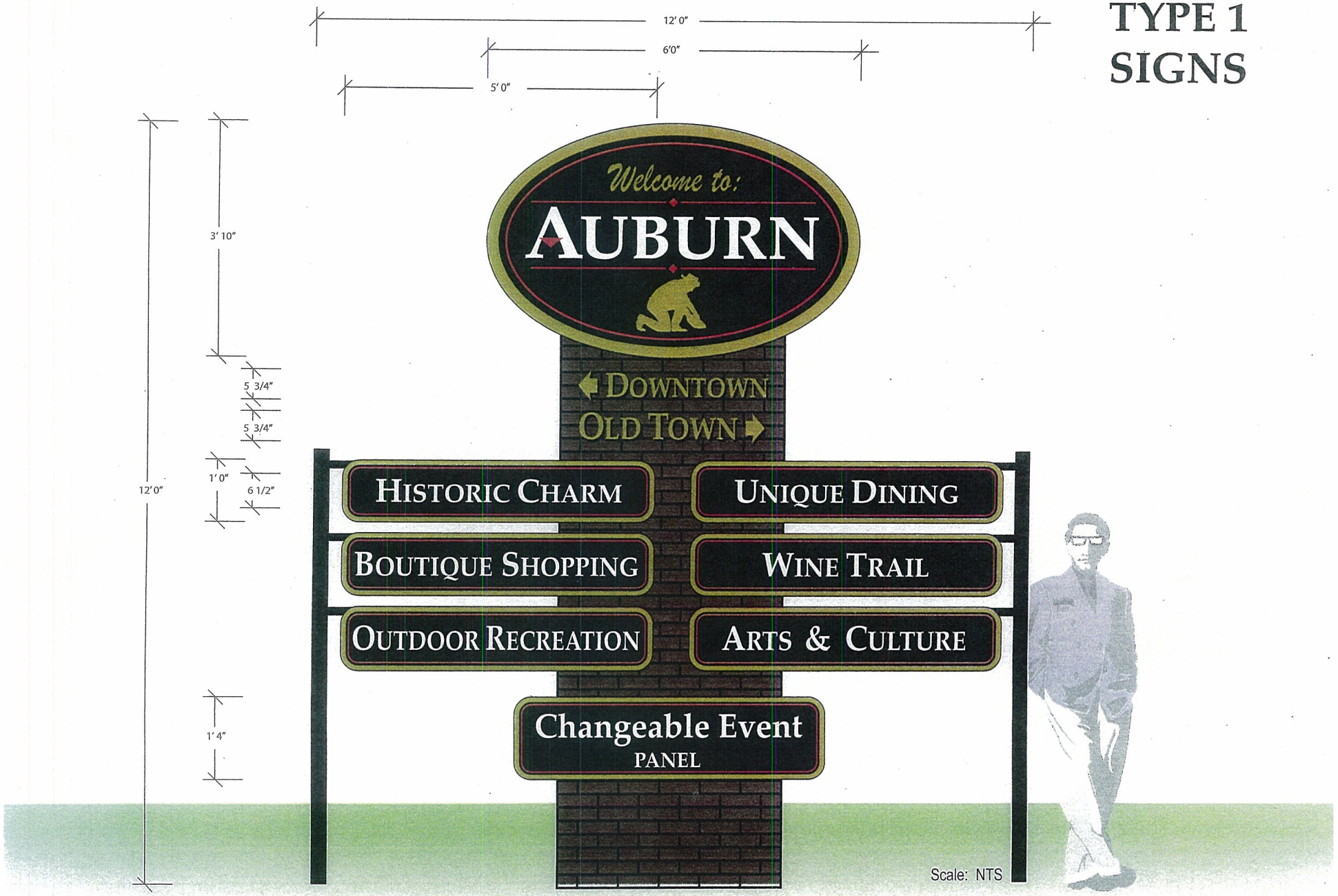


Side Detail NTS

TYPE 1 SIGNS

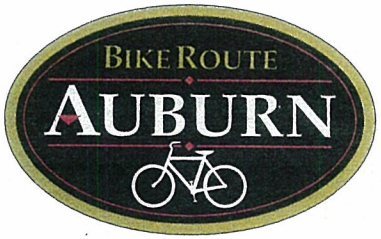

12' 0"
6'0"
5' 0"
3' 10"
5 3/4"
5 3/4"
1' 0"
6 1/2"
12' 0"
1' 4"
Welcome to:
AUBURN
DOWNTOWN
OLD TOWN
HISTORIC CHARM
UNIQUE DINING
BOUTIQUE SHOPPING
WINE TRAIL
OUTDOOR RECREATION
ARTS & CULTURE
Changeable Event
PANEL
Scale: NTS

TYPE 3, 4, 5, 6, 7 SIGNS

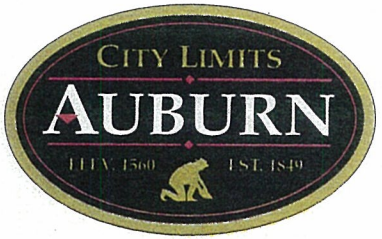
TYPE 3

TYPE 4

TYPE 5



TYPE 6



TYPE 7

Scale: NTS

CONTENT

Following is a list of potential content for all the signs within the master plan. Leadership Auburn 2012 recommends that final decisions on content are at the discretion of either the City of Auburn or the actual "funder" of the sign(s).

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Wayfinding Signage Master Plan - CONTENT

Agricultural Attractions
Farm & Barn Tours
Farmers Market
Local Harvest

Arts & Culture
Art Exhibits
Galleries
Shows

Dining
Eateries
Food
Quality Restaurants
Restaurants

Historical Attractions
California Historical Town
Historical Buildings
Historic Charm
Historic Churches & Cemeteries
Museum

Lodging
Bed & Breakfast
Hotels

Outdoor Recreation
Bike Trail
Camping
Golf Course
Outdoor Play
Parks & Recreation
Parks & Trails
Recreation Park Riding Trail
Trails
Wilderness Trail

River Recreation
American River Confluence
Boating
Canoeing
Fishing
Kayaking
Rafting
Water Recreation
Water Sports/Attractions

Miscellaneous
Airport
Amgen Bicycle Tour
Bird Sanctuary
City Hall
Community Center
Dog Park
Down Town
Endurance Capital
Fairgrounds
Historic Court House
Movie Theatre
Old Town
Parking
Police Station
Race Track
River Overlook
Tevis Cup 100 Mile Race
Tevis Endurance Trail
Train Station
Western States Endurance Run/Ultra Marathon
Western States Endurance Ride/Tevis Cup

Shopping
Boutique Shopping
Boutiques
Specialty Shops

Wine Trails
Vineyards
Wine Tasting
Winery

CITY OF AUBURN WAYFINDING SIGN LOCATIONS

Pg	Location	Daily Traffic Count	Posted Speed	Critical Speed	Direction	Sign Type	# of Signs	Sign Content
5	AUBFOL4 #4 AFR							
	Northbound AFR @ Lee's Lane	8482	35	45/47	N	6	1	City Limits Auburn
6	AUBFOL5 #5 IHR to City Limits							
	Eastbound IHR @ Dillon's Circle	5391	40	44/47	E	6	1	City Limits Auburn
7	#14 IHR @ Dillon's Circle							
	Indian Hill City Limits to AFR	5492	40	47/49	N	3	1	Downtown, Old Town,Historic Courthousem Rec Park
8	#18 Maidu Dr (AFR to City Limits)							
	N.E. bound AFR @ Maidu	3157	35	40/40	N	2 or 4	1	Community Center, Auburn State Park, River Overlook
9	Intersection AFR @ Maidu				S	2 or 4	1	Downtown, Old Town, Restaurants, Shopping
10	AUBFOL3 #3 AFR, Herdal to Pacific							
	AFR @ Pacific	10455	45	50/55	N	2 or 4	1	River Overlook, Railhead Park
					S	2 or 4	1	River Overlook, Railhead Park
11	SACST2 #28 Sac. St-Pacific							
	Pacific to Sacramento St	2137	25	38/36	N/S	2 or 4	1	Downtown, Old Town,Historic Courthouse
12	Intersection AFR @ Sacramento					2 or 4	3	Downtown, Old Town, Fairgrounds, Historic Courthouse,
								Rec. Park
13	SACST 1 (AFR to Pacific)							
	NB Sacramento @ Pacific	1808			Corner	2 or 4	1	Fairgrounds,Railhead Park, River Overlook
								Tevis Endurance Trail
14	AUBFOL2 Pacific to Racetrack							
	AFR @ Racetrack	11865	45	47/49	N/S	3	2	Bernhard Museum,Downtown, Old Town,Historic Courthouse
								Fairgrounds, Parking
15	# 26 Pleasant Ave (High St/ Pacific)							
	NE bound AFR @ High St.	950	25	28/27	N	3	1	Downtown, Old Town, Historic Courthouse
					S	2	1	Old Town, Placer High School, Clock Tower

CITY OF AUBURN WAYFINDING SIGN LOCATIONS

Pg	Location	Daily Traffic Count	Posted Speed	Critical Speed	Direction	Sign Type	# of Signs	Sign Content
16	WB Lincoln opp Historic Courthouse					3 angled	2	Old Town, Restaurants, Shops, Parking,
	Old Town @ parking lot							Boutique Shops, City Hall, Restaurants, Wine Tasting
17	AUBFOL1 #2 AFR							
	AFR (Lincoln to Racetrack)	13300	35	39/39	NW/SE	3	2	Downtown, Old Town,Historic Courthouse, Parking
						7	1	Parking
18	**Old Town**							
	at Historic Courthouse					3	1	Historic Courthouse, Old Town, Downtown, Fairgrounds
	at Maple St. southbound					2	1	Old Town, Parking, Restaurants, Shopping
	at Maple St. Eastbound					2	1	Historic Courthouse, Old Town, Downtown, Fairgrounds
	at gas station					2	1	Old Town, Parking, Restaurants, Shopping
	on Commercial Lane					3	1	Downtown, Historic Courthouse, Lincoln Way, Fairgrounds
19	**Downtown**							
	at clocktower					2	1	High Street, Lincoln Way, Restaurants, Shopping
	at High & Harrison					3	1	American River, Highway 49
	at 49/RR undercrossing					3	1	Downtown, Old Town, Restaurants, Shopping
	at Lincoln & Cherry					3	1	Chamber of Commerce, Highway 49,
	at elm & high Downtown					2	1	Downtown, Old Town, Restaurants, Shopping
20	Highway 80 Exit/Nevada St					3	2	Downtown, Old Town,Historic Courthouse, Parking
21	Highway 80 @ Russell					2 or 4	1	Downtown, Old Town,Highway 49, Historic Courthouse
	(Westbound)							
	Russell at Lincoln					2 or 4	1	Downton, Old Town, Highway 49, Historic Courthouse
22	Highway 80 @ Russell					2 or 4	2	Downtown, Old Town,Highway 49, Historic Courthouse
	(Eastbound)					6	1	City Limits Auburn
23	Nevada St @ Palm					2 or 4	4	Downtown, Old Town
24	Nevada St. @ Fulweiler					2 or 4	4	Downtown, Old Town
25	Fulweiler @49					2 or 4	4	Downtown, Old Town

CITY OF AUBURN WAYFINDING SIGN LOCATIONS

Pg	Location	Daily Traffic Count	Posted Speed	Critical Speed	Direction	Sign Type	# of Signs	Sign Content
26	Elm St shopping center @ 80					2 or 4	1	Downtown, Old Town
						2 or 4	3	Downtown, Old Town
27	Hwy 80 Elm Exit					3	1	Downtown, Old Town, Historic Courthouse, Restaurants, Shopping
28	Central Square					2	3	Downtown, Old Town, Highway 49, Historic Courthouse Restaurants, Shopping
29	City Hall					1	1	Downtown, Old Town,Historic Charm, Boutique Shopping Outdoor Recreation, Unique Dining, Wine Trail, Arts & Culture
30	Intersection at City Hall					3	1	Downtown, Old Town,Fairgrounds, Historic Courthouse
						2	1	Old Town, Fairgrounds, Parking
31	Intersection @ Lincoln Way & Oakwood					2 or 4	3	Downtown, Old Town, City Hall, Historic Courthouse, Parking
32	All City Limits Signs					6	12	
33	All Parking Signs							Quantity to be determined
	TOTAL						76	

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Wayfinding Signage Master Plan – *Locations Section*

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Wayfinding Signage Master Plan - *Table of Contents*

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Wayfinding Signage Mast Plan - *Preface*

This section is Leadership Auburn's recommendation for both new and replacement "Wayfinding signage" within the Auburn City Limits.

These recommendations are designed to help guide Auburn visitors to both the Downtown and Old Town districts in an effort to boost local commerce, and City tax revenues.

The following information does not comprise a complete inventory of all City "wayfinding" signs.

All existing signs should be replaced once a new master plan is adopted.

The City of Auburn, future Leadership Auburn classes and other local service groups are encouraged to enhance and expand upon this plan over time.

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Street Sign Project - *What Auburn Offers & more!*

- California Historical Town
- Gold Mining History
- Chinese Immigration
- Museums
- City Hall
- Old Town
- Downtown
- Fairgrounds
- Race Track
- American River/Confluence
- River Overlook
- Wine Trail
- Bird Sanctuary
- Bike Trail
- Recreation Parks
- Airport
- Train Station
- 110+ year old High School
- Farmers Market
- Confluence Festival
- Hiking, Fishing & Camping
- Parking
- Antique Fair
- Historical Buildings
- Family Night
- Art Walk
- Wine & Dine Night
- Gold Country Fair
- Cruise Night
- Historic Churches
- Veterans Memorial
- Antique Show
- Old Town Christmas Faire
- Christmas Parade of Lights
- Placer County Government Seat (Dewitt Center)
- Historic Courthouse
- Canyon View Community Center
- Old Auburn, Chinese & Indian Cemeteries
- Endurance Capital
- Dentist Statues
- Golf Courses
- Movie Theatres
- Quality Restaurants
- Auburn Recreation Area
- Amgen Bicycle Tour
- Marathon
- Western States 100 Mile Race
- Tevis Cup 100 Mile Race
- Wildlife (eagles, ospreys, black bears, otters, mtn. lions)
- and MUCH MORE!!!!!

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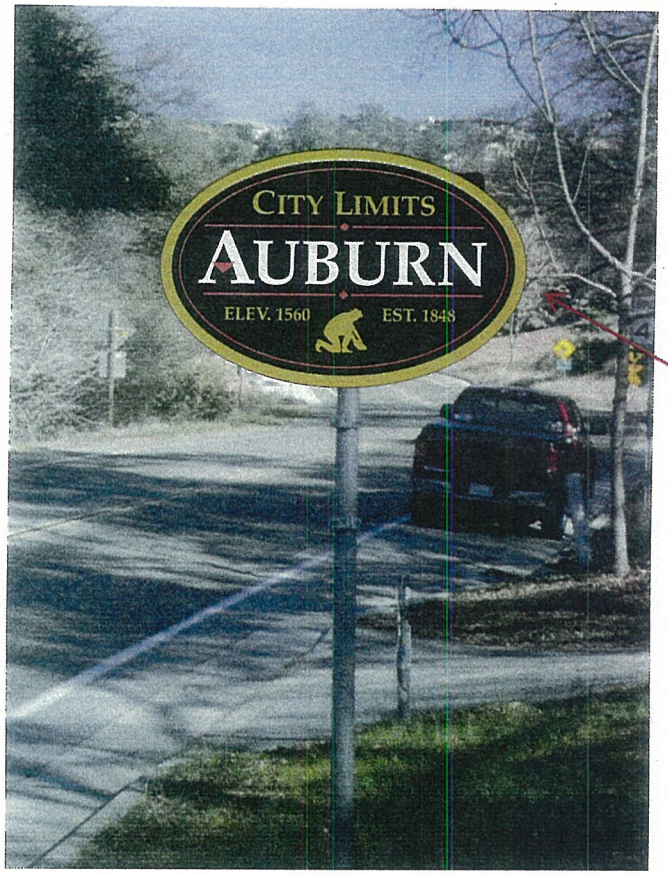
Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: North bound Auburn Folsom Road (AFR) @ Lee's Lane

#4 Auburn Folsom Road – AUBFOL 4

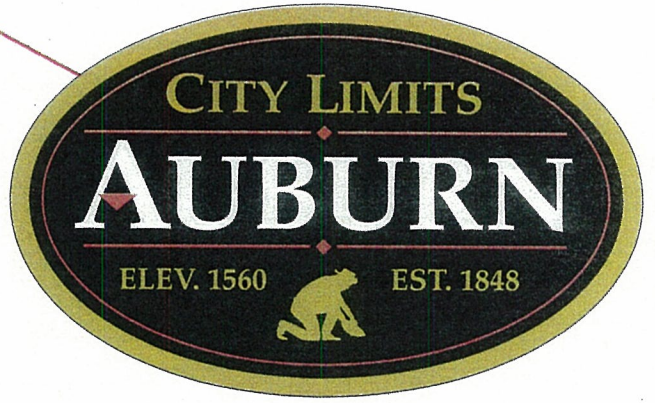
(ALL CITY LIMIT SIGNS SHOULD BE REPLACED)



Current Situation

- *Southern most city limit boundary*
- *Immediately following a blind turn*
- *Showing signs of weathering*
- *Slightly defaced*
- *Posted Speed: 35*
- *Critical Speed: 45/47*
- *Direction: North/South*
- *Average Daily Traffic:* **8482**

Solution: ***Replace Current Sign***



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Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: East bound on Indian Hill Road (IHR) @ Dillon's Circle

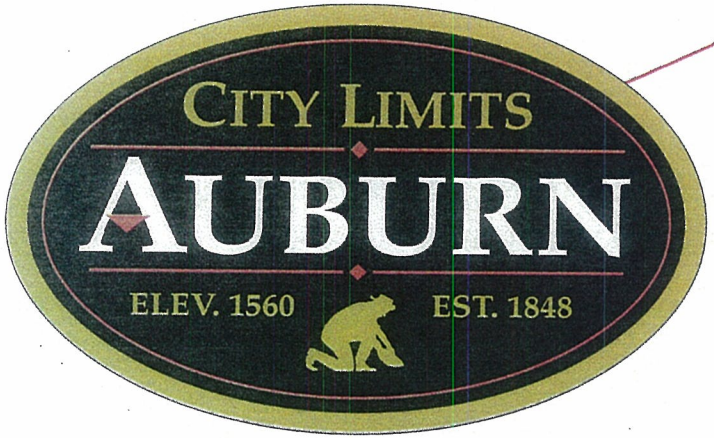
#5 Auburn Folsom Rd – AUBFOL5 (Indian Hill Road to City Limits)

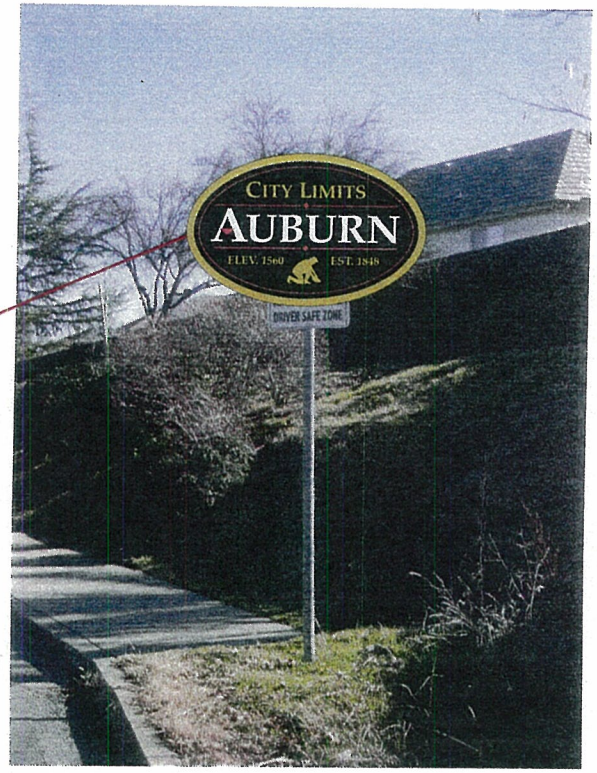
(ALL CITY LIMIT SIGNS SHOULD BE REPLACED)

Current Situation:

- *Western most city limit boundary*
- *Immediately following a long turn*
- *Sign difficult to see at high speed*
- *Posted Speed 35mph*
- *Critical Speed 45/47*
- *Direction : North & South*
- *Average Daily Traffic:* ***5391***

Solution: ***Replace Current Sign***





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Wayfinding Signage Master Plan – *Proposed Street Sign*

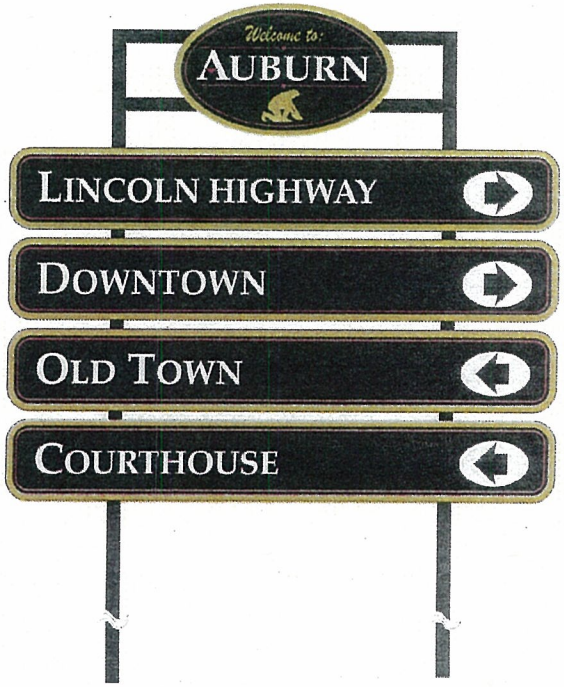
Location: East bound on Indian Hill Road (IHR) @ Dillon's Circle

#14 Indian Hill Road (City Limits to Auburn Folsom Road)

Current Situation

- *No Wayfinding Auburn Sign*
- *Posted Speed Limit: 40*
- *Critical Speed: 47/49*
- *Direction: East/West*
- *Average Daily Traffic:* **5492**

Solution: ***Install New Sign***



Recommended Content

- *Fairgrounds*
- *Downtown/Old Town*
- *Historic Courthouse*
- *Recreation Park*

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Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: North East bound Auburn Folsom Road (AFR) @ Maidu

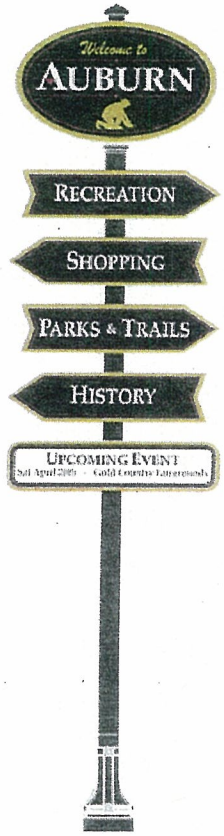
#18 Maidu Drive (AFR to City Limits)

Current Situation

- *No north bound direction sign*
- *No south bound direction sign*
- *No overlook or community center sign*

- *Posted Speed Limit: 40*
- *Critical Speed: 47/49*
- *Direction: East/West*
- *Average Daily Traffic:* ***3157***

OR



Solution: ***Install New North & Southbound signs 100 Feet before intersection***

Recommended Content

- *Canyon View Community Center*
- *Auburn State*
- *River Overlook*

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Wayfinding Signage Master Plan – *Proposed Street Sign*

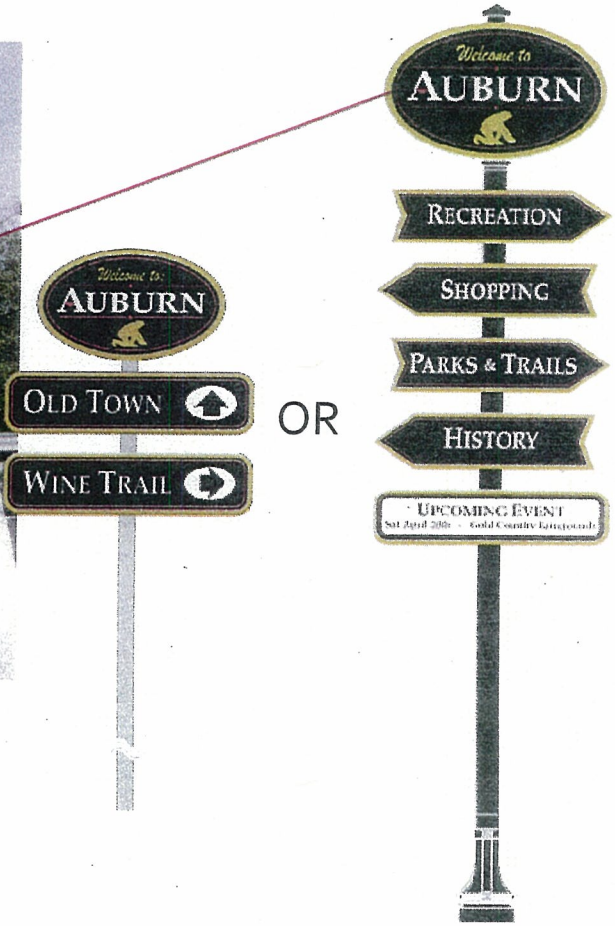
Location: Intersection of Auburn Folsom Road and Maidu

Current Situation

- *No signage*

Solution:

Install New Sign



Recommended Content

- Downtown
- Old Town
- Food & Drink

Leadership Auburn – 2012

Wayfinding Signage Master Plan – *Proposed Street Sign*

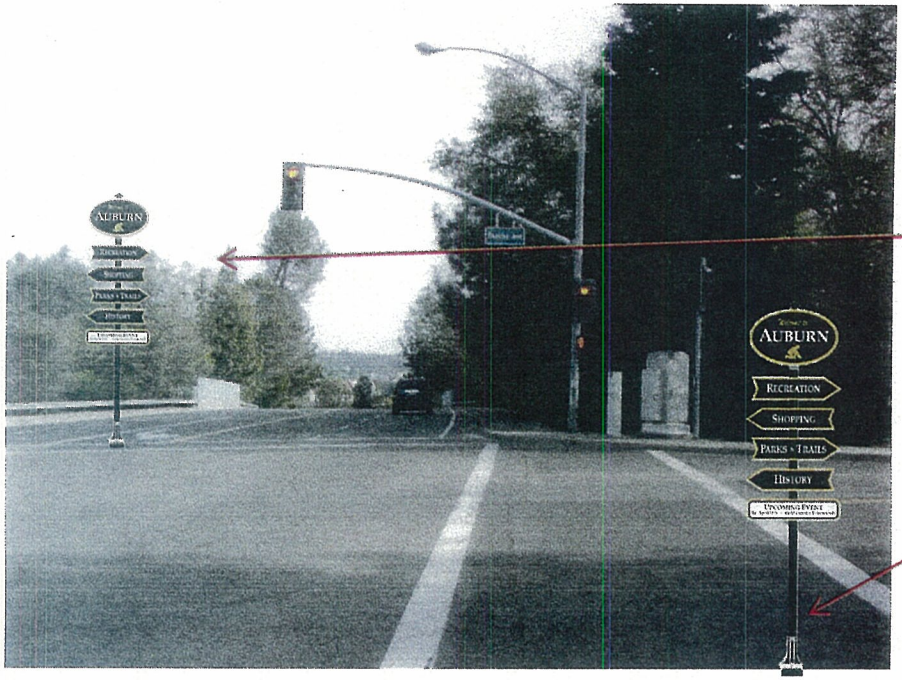
Location: North bound Auburn Folsom Road (AFR) @ Pacific

#3 Auburn Folsom Road – AUBFOL3 (Herdal to Pacific)

Current Situation

- *No north bound direction sign*
- *No south bound direction sign*
- *No Auburn Overlook or Railhead Park sign*
- *Posted Speed Limit: 40*
- *Critical Speed: 47/49*
- *Direction: East/West*
- *Average Daily Traffic:* **10,455**

Solution: ***Install New North & South bound signs 100 feet before the intersection***



OR

Recommended Content

- *River Overlook*
- *Rail Head Park*

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Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: West bound Pacific Ave. between Auburn Folsom Road (AFR) & Sacramento St. *#28 Sacramento St – SACST.2 (Pacific Ave to AFR)*

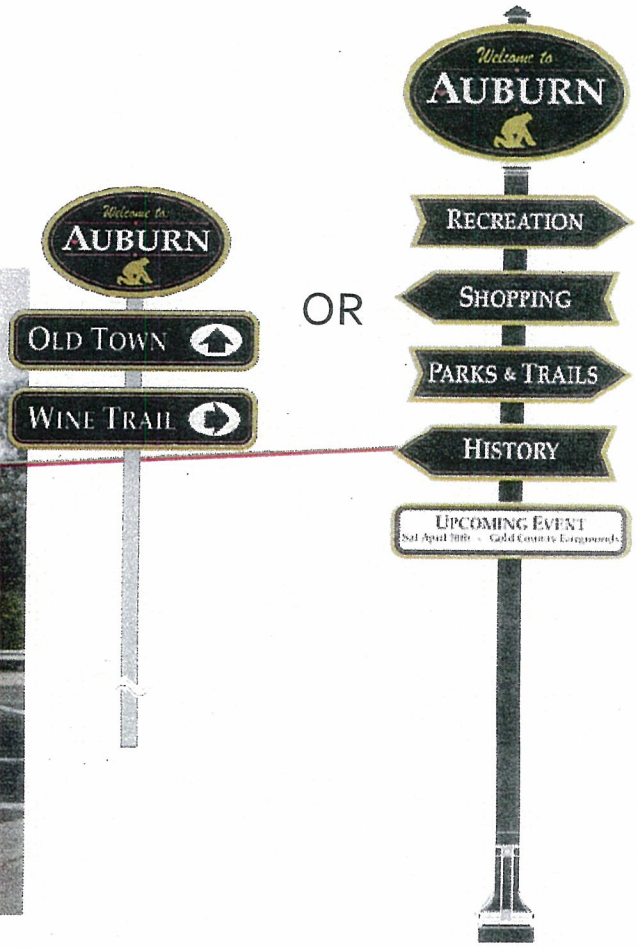
Current Situation

- *No Sign*
- *Posted Speed Limit: 25*
- *Critical Speed: 36/38*
- *Direction: East/West*
- *Average Daily Traffic:* ***2137***

Solution: ***Install New Sign***

West bound Recommended Content

- Downtown
- Old Town
- Food & Drink



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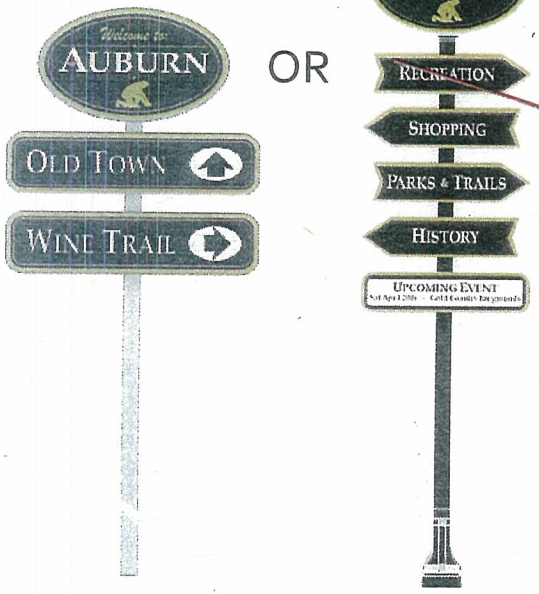
Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: Intersection of Auburn Folsom Road and Sacramento Street (turning right onto AFR from Sacramento St.)



OR

Current Situation

- *No Sign*

Solution: Install New Sign

Recommended Content

- *Downtown*
- *Old Town*
- *Fairgrounds*
- *Historic Courthouse*

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Wayfinding Signage Master Plan – *Proposed Street Sign*

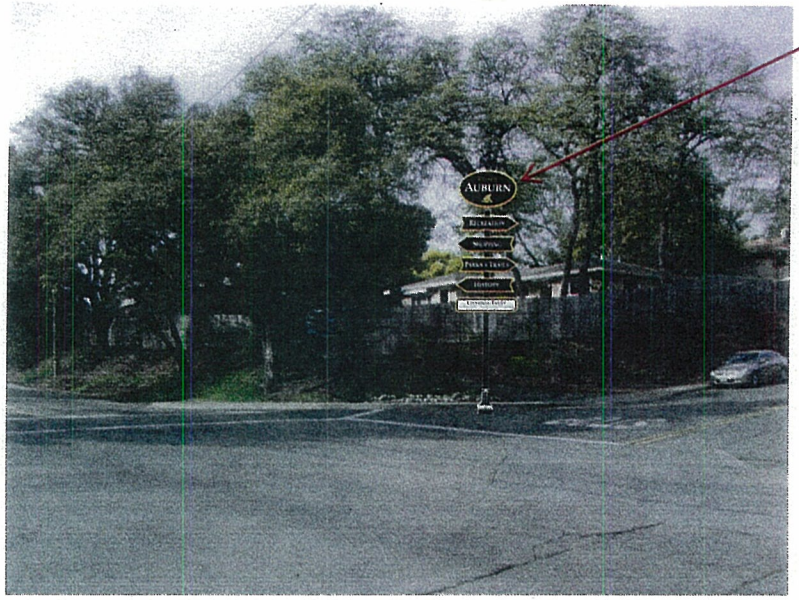
Location: North bound Sacramento Street at Pacific Avenue

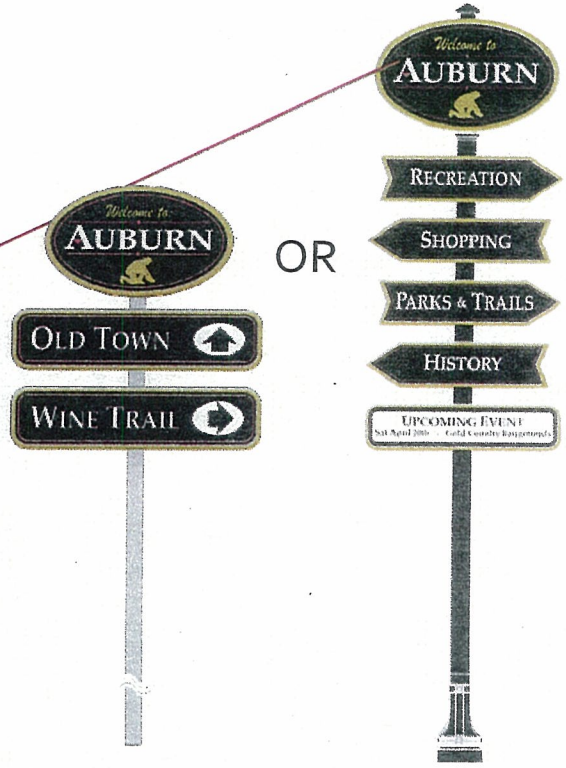
#27 Sacramento St – SACST.1 (AFR to Pacific Ave)

*Solution: **Install New Sign***

Current Situation

- *No sign in any direction*
- *No Auburn Overlook or Railhead Park sign*
- *No reference to Downtown or Old Town*
- *Posted Speed Limit: 25*
- *Critical Speed: unknown*
- *Direction: N/E/W & S*
- *Average Daily Traffic: **1808***





Recommended Content

- *Fairgrounds*
- *Rail Head Park Parking*
- *River Overlook*
- *Tevis Endurance Trail*

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Wayfinding Signage Master Plan – *Proposed Street Sign*

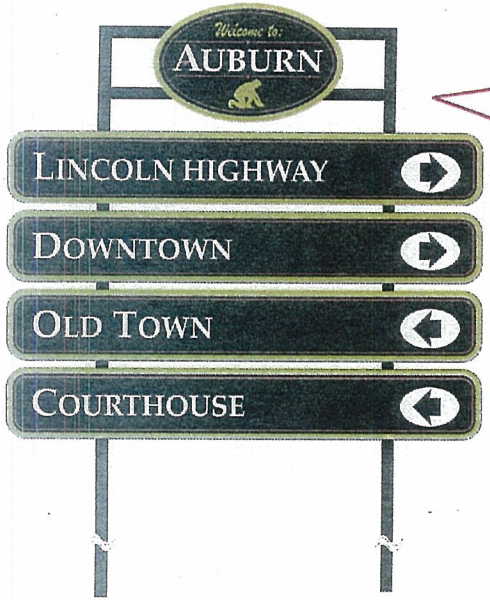
Location: North East bound Auburn Folsom Road (AHR) @ Racetrack

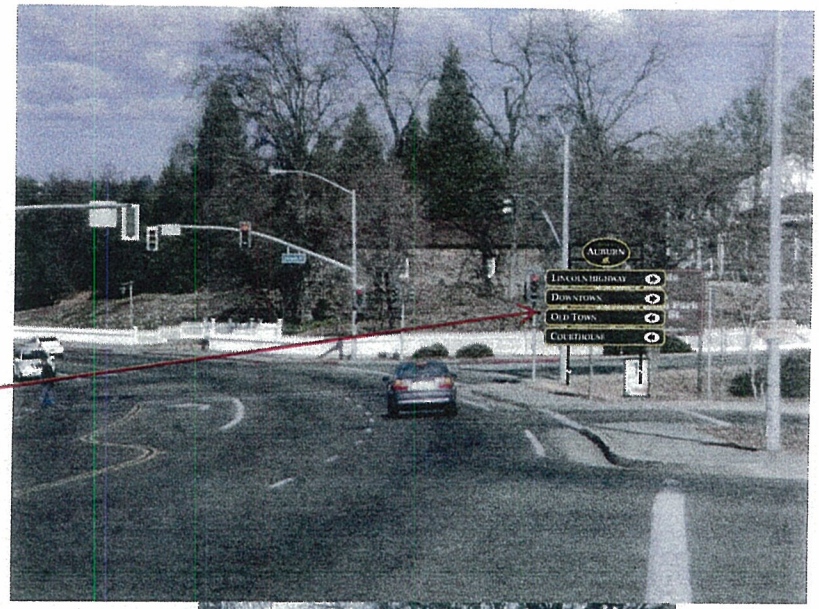
Pacific to Racetrack (Auburn Folsom Road – AUBFOL2

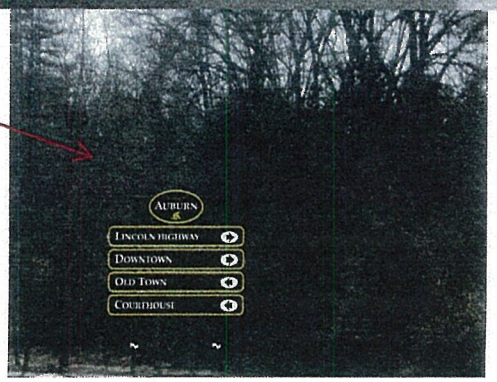
Current Situation

- *Typical large Auburn "brown" sign*
- *Good Content*
- *No mention of Museum & Parking*
- *Posted Speed: 45*
- *Critical Speed: 47/49*
- *Direction: North/South*
- *Average Daily Traffic:* ***11865***

Solution:
Replace both North & South bound Signs







Recommended Content

- *Bernhard Museum*
- *Historic Courthouse*
- *Downtown*
- *Fairgrounds*
- *Old Town*
- *Parking*

Leadership Auburn – 2012

Wayfinding Signage Master Plan – *Proposed Street Sign*

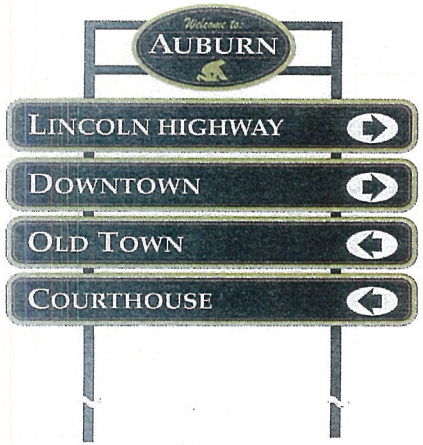
Location: North East bound Auburn Folsom Road (AHR) @ High Street

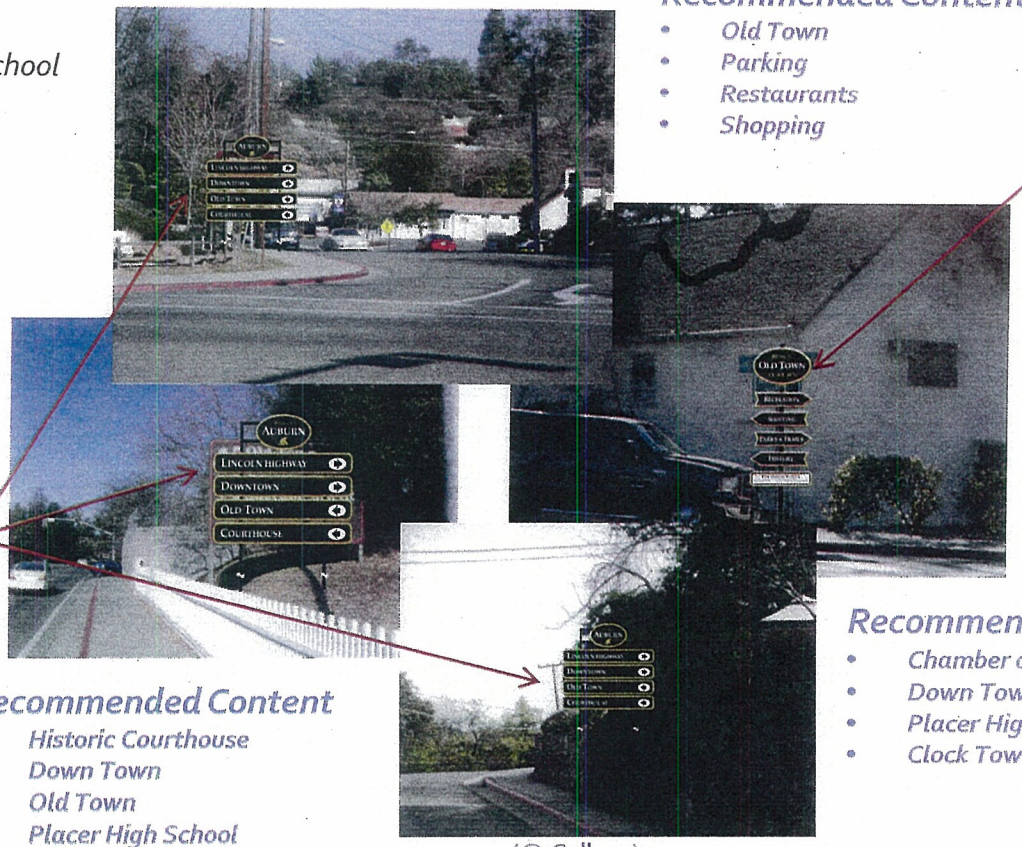
#26 Pleasant Ave. (High St. to Pacific Ave.)

Current Situation

- *Unique Historical sign*
- *No reference to Placer High School*
- *No reference to City Hall*
- *No Farmers Market reference*
- *No Parking Sign*
- *Posted Speed: 25*
- *Critical Speed: 28/27*
- *Direction: N/S*
- *Average Daily Traffic:* **950**

Solution: ***Replace Signs***





Recommended Content

- *Historic Courthouse*
- *Down Town*
- *Old Town*
- *Placer High School*

Recommended Content

- *Old Town*
- *Parking*
- *Restaurants*
- *Shopping*

Recommended Content

- *Chamber of Commerce*
- *Down Town*
- *Placer High School*
- *Clock Tower*

(@ College)

Leadership Auburn – 2012

Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: West bound Lincoln Street just past Hwy 49 & opposite Courthouse

Current Situation

- *No Parking Sign*
- *No signs directing to Old Town*
- *No sign directing to Downtown*

*Solution: **new dual-angled sign***

Recommended Content

- *Boutique Shops*
- *Downtown*
- *Old Town*
- *Parking*
- *Restaurants*
- *Wine Tasting*

Leadership Auburn – 2012

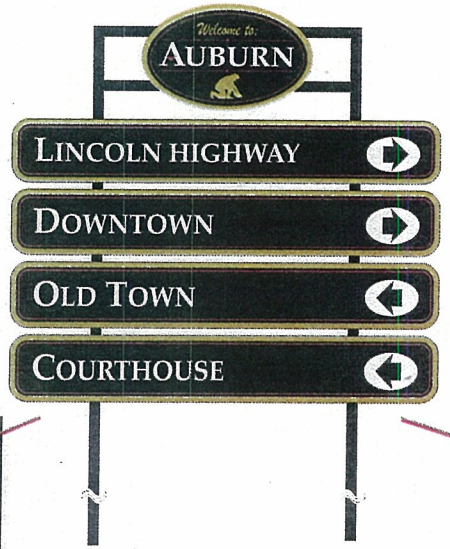
Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: North East bound Auburn Folsom Road (AHR) @ Lincoln Street

#2 Auburn Folsom Rd – AUBOL1 (Lincoln Way to Racetrack)

Current Situation

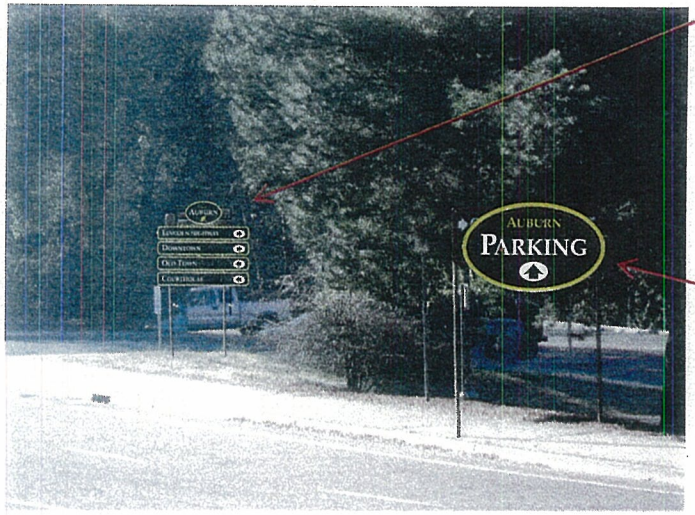
- *No north bound parking (only south bound)*
- *Unique and Duplicated Lincoln reference*
- *Lincoln Hwy and Lincoln Way reference*
- *Small Old Town sign*
- *Small, obscured & dilapidated Downtown*
- *Posted Speed: 35*
- *Critical Speed: 39/39*
- *Direction: NW/SE*
- *Average Daily Traffic:* ***13300***

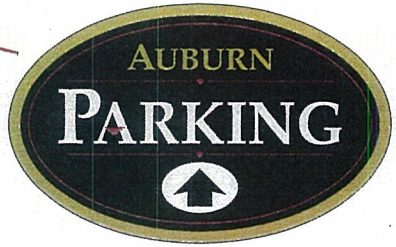


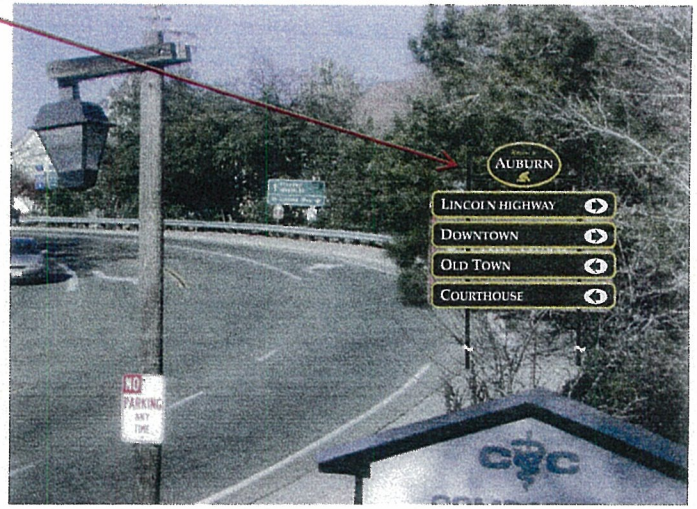
Solution: Replace Signs

Recommended Content

- *Boutique Shops*
- *City Hall*
- *Historic Courthouse*
- *Parking*
- *Restaurants*
- *Wine Tasting*



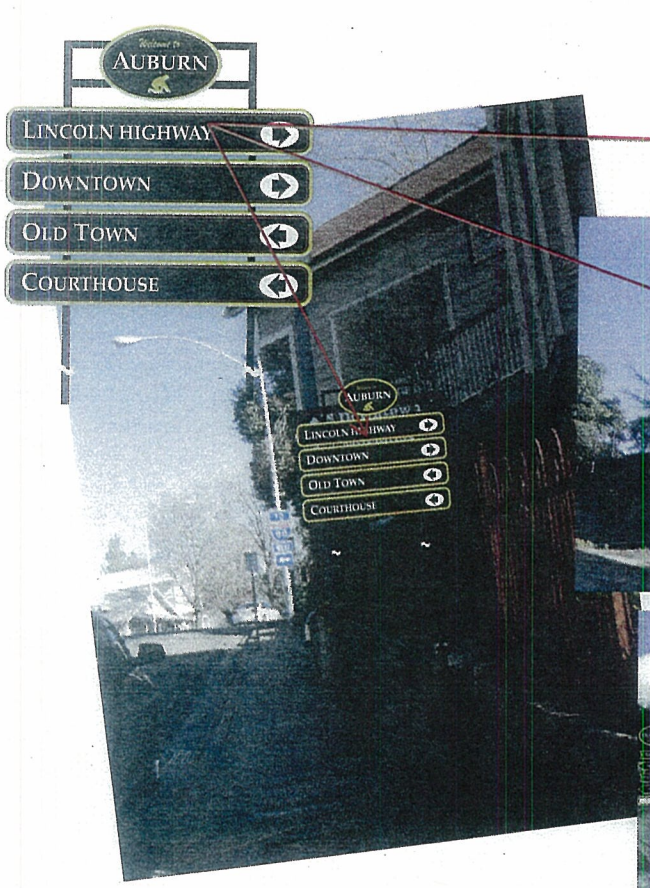




Leadership Auburn – 2012

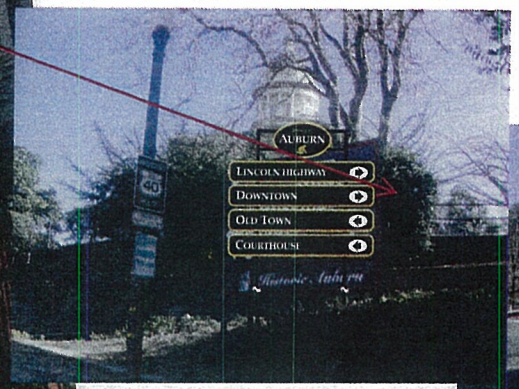
Wayfinding Signage Master Plan – *Proposed Street Sign*

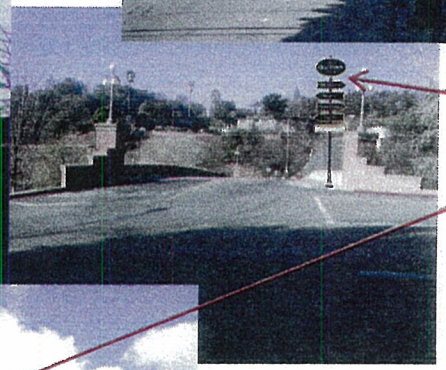
Location: Old Town "headed out of town" Signs

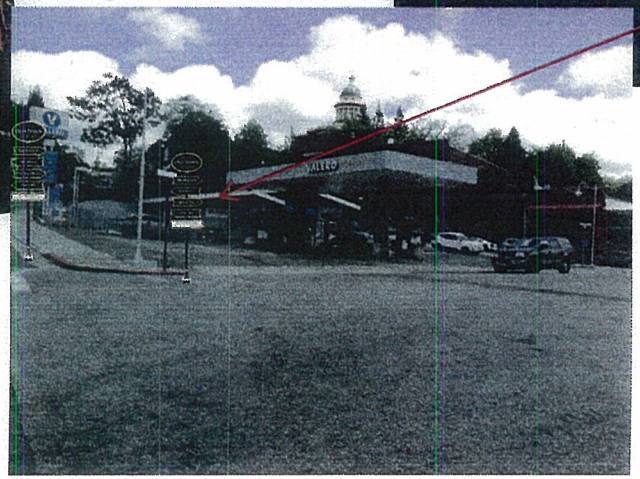


Current Situation

- *No Parking Signs*
- *No Hwy 49 Intersection signs*
- *No City Government signs*
- *No Downtown signs*
- *No American River signs*







Solution: **Replace Signs & Add New**

Recommended Content

- *Art & Culture*
- *Boutique Shops*
- *City Hall*
- *Downtown*
- *Fairgrounds*
- *Historic Courthouse*
- *Museum*
- *Old Town*
- *Restaurants*

Leadership Auburn – 2012

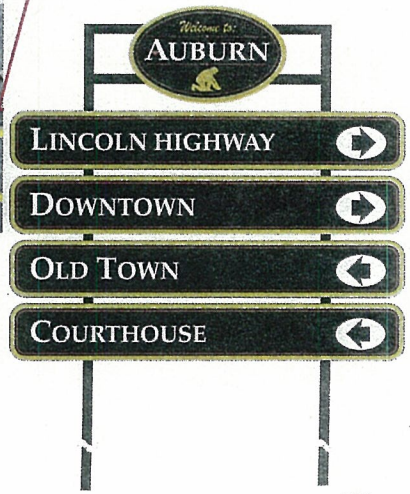
Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: Down Town Signs

Current Situation

- *No Parking Signs*
- *No Hwy 49 Intersection signs*
- *No City Government signs*
- *No Downtown signs*
- *No American River signs*

Solution: Replace Signs & Add New



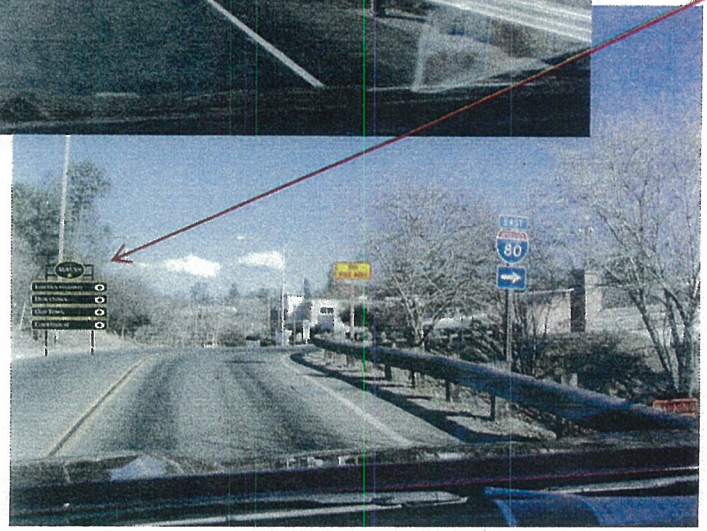
Recommended Content

- *Downtown*
- *Lincoln Way*
- *Old Town*
- *Parking*
- *Restaurants*
- *Shopping*

Leadership Auburn – 2012

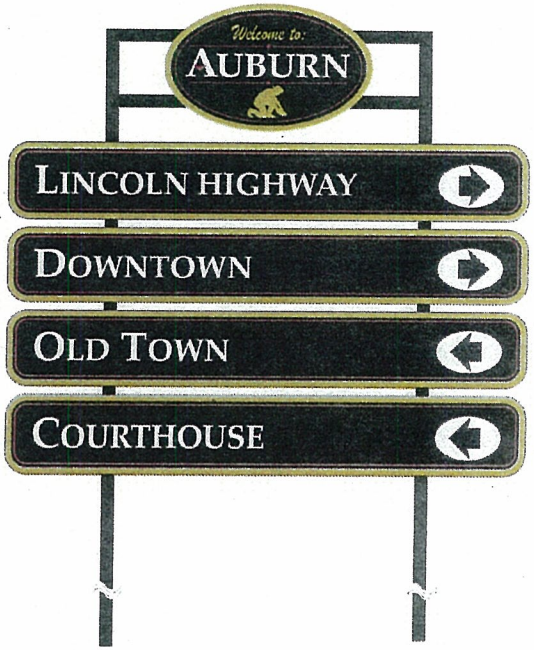
Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: A few Highway 80 Auburn Signs – Southwest Bound



Current Situation

- *No Parking Signs*
- *No Hwy 49 Intersection signs*
- *No City Government signs*
- *No Downtown signs*
- *No American River signs*



Solution:
Install New Signs

Recommended Content

- *Downtown*
- *Historic Courthouse*
- *Museum*
- *Old Town*
- *Parking*
- *Restaurants*

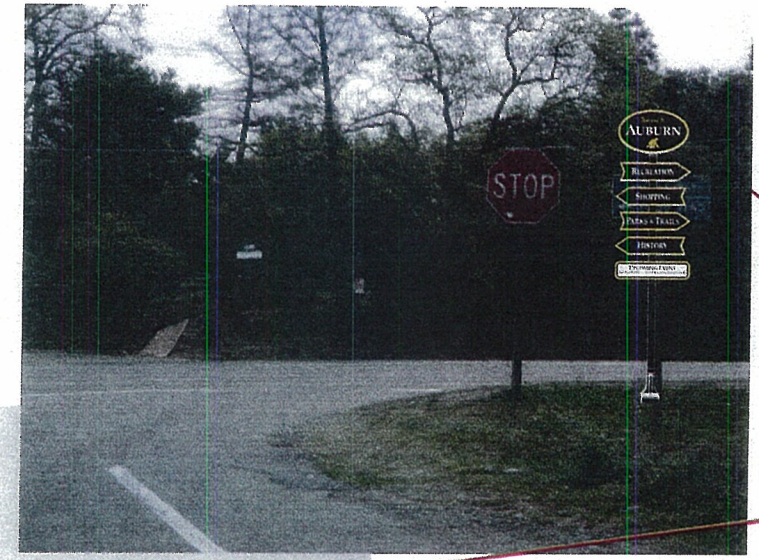
Leadership Auburn – 2012

Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: West Bound Highway 80 Exit at Russell Road

Current Situation

- *No Hwy 49 signs*
- *No Downtown*
- *No Restaurant/Shopping signs*



OR

Solution:
Replace Signs

Recommended Content

- *Downtown*
- *Restaurants*
- *Shopping*
- *Hwy 49*

Leadership Auburn – 2012

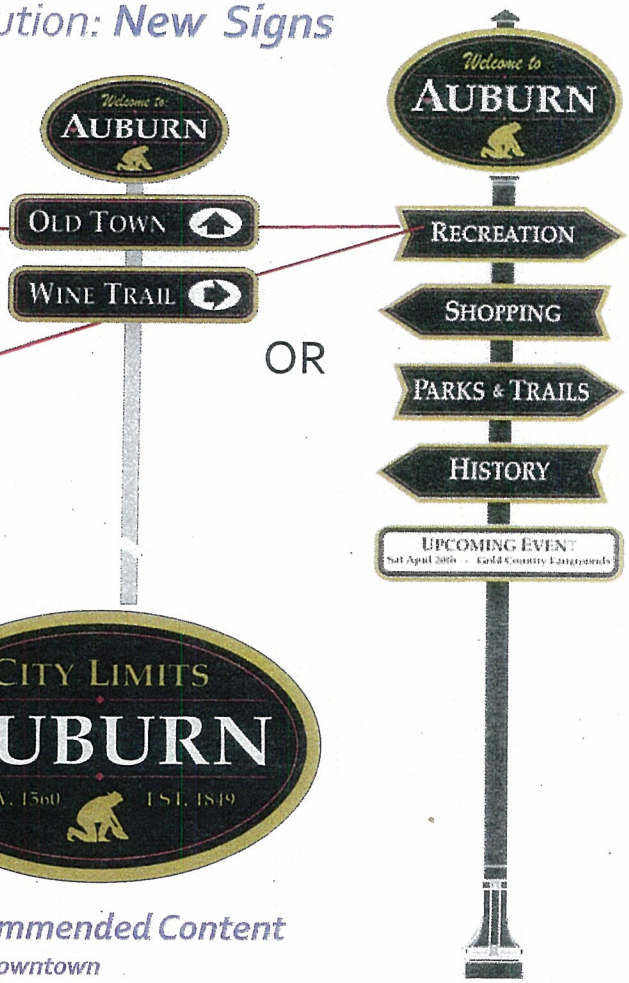
Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: East Bound Highway 80 Exit at Russell Road

Current Situation

- *No Parking Signs*
- *No Hwy 49 Intersection signs*
- *No City Government signs*
- *No Downtown signs*
- *No American River signs*

Solution: New Signs



Recommended Content

- *Downtown*
- *Old Town*
- *Highway 49*
- *Historic Courthouse*

Leadership Auburn – 2012

Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: Intersection of Nevada Street & Palm Avenue

Current Situation

- *No signs*

Solution:
Install
New
Signs

OR

Recommended Content

- *Downtown*
- *Old Town*
- *Restaurants*
- *Shopping*

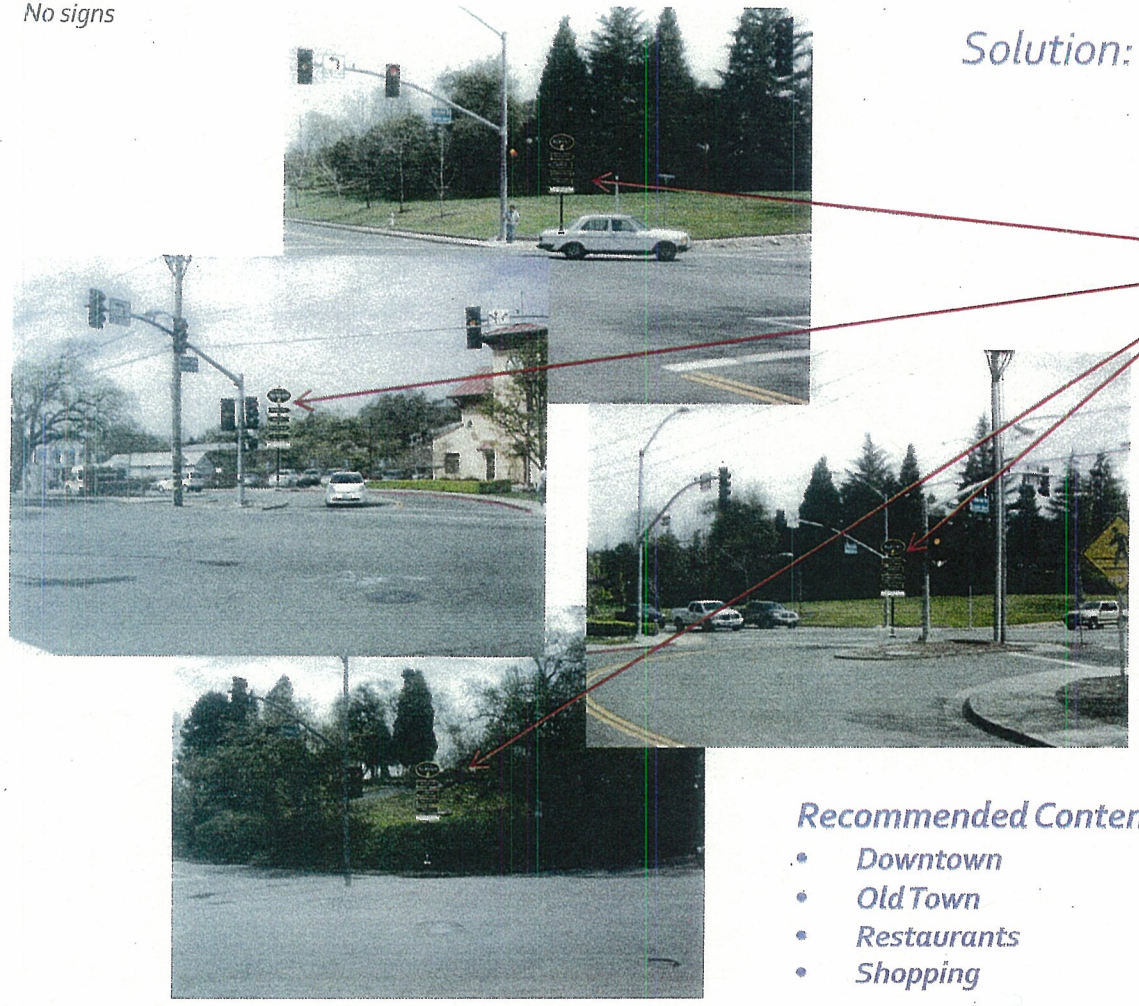
Leadership Auburn – 2012

Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: Intersection of Nevada Street & Fulweiler Avenue

Current Situation

- *No signs*



Solution: Install New Signs

OR

Recommended Content

- *Downtown*
- *Old Town*
- *Restaurants*
- *Shopping*

Leadership Auburn – 2012

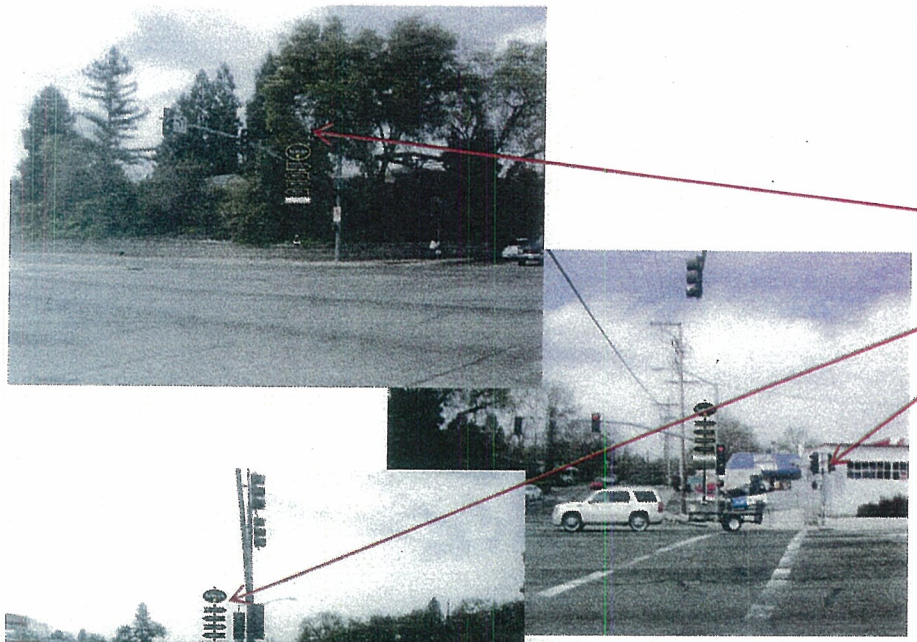
Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: Intersection of Grass Valley Hwy & Fulweiler Ave

Current Situation

- *No signs*

Solution: Install New Signs



OR

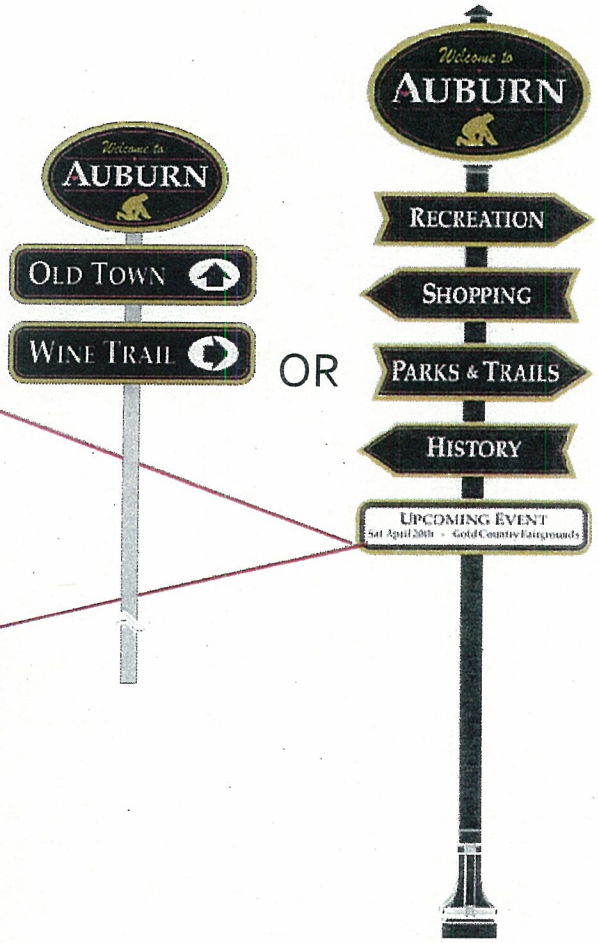
Recommended Content

- *City Hall*
- *Downtown*
- *Historic Courthouse*
- *Museum*
- *Old Town*
- *Restaurants*

Leadership Auburn – 2012

Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: Elm Street Shopping Center



Current Situation

- *No Signs*

Solution: Install New Signs

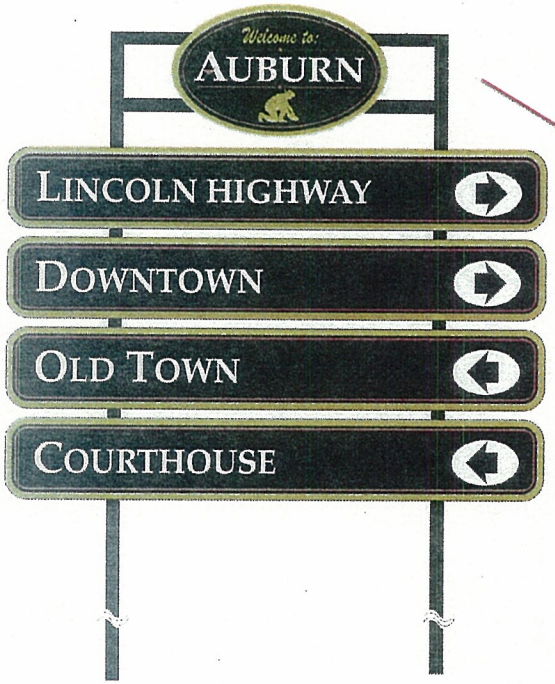
Recommended Content

- *City Hall*
- *Downtown*
- *Historic Courthouse*
- *Museum*
- *Old Town*
- *Restaurants*

Leadership Auburn – 2012

Wayfinding Signage Master Plan – *Proposed Street Sign*

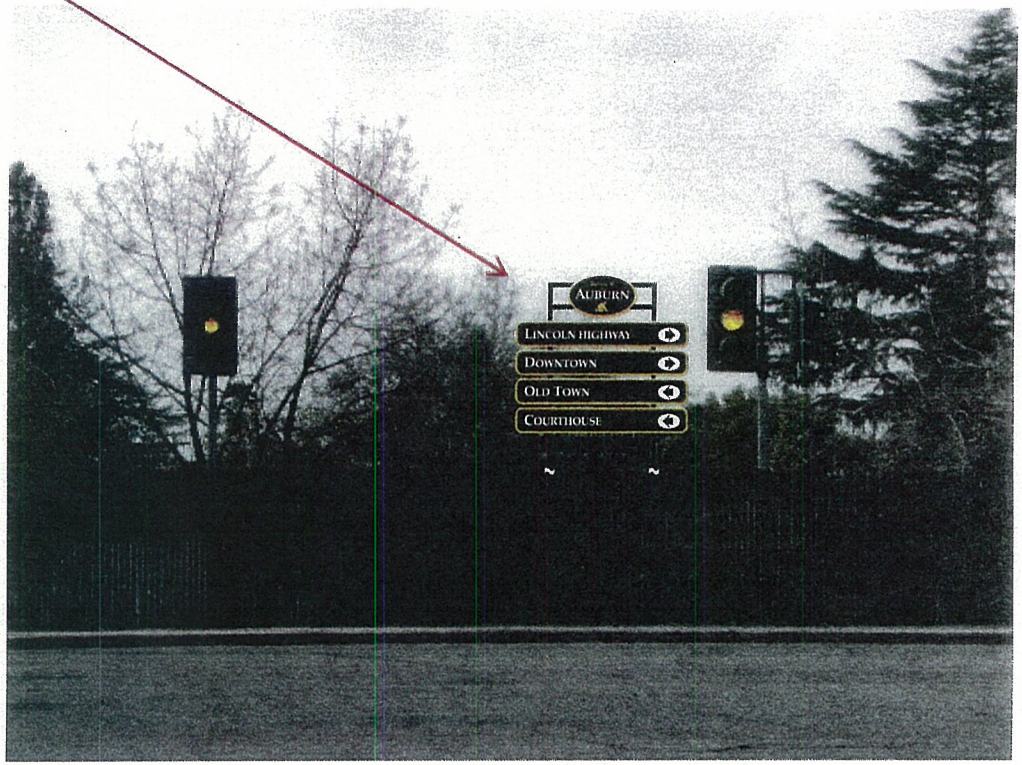
Location: EB Highway 80 Elm Street Exit



Current Situation

- *Old sign needs to be replaced*

Solution:
Replace Sign



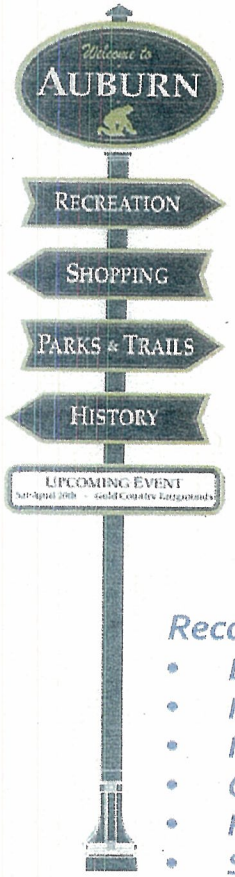
Recommended Content

- *Downtown*
- *Historic Courthouse*
- *Old Town*
- *Restaurants*
- *Shopping*

Leadership Auburn – 2012

Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: Central Square



Current Situation

- *No signs*

Solution: Install New Signs

Recommended Content

- *Downtown*
- *Highway 49*
- *Historic Courthouse*
- *Old Town*
- *Restaurants*
- *Shopping*

Leadership Auburn – 2012

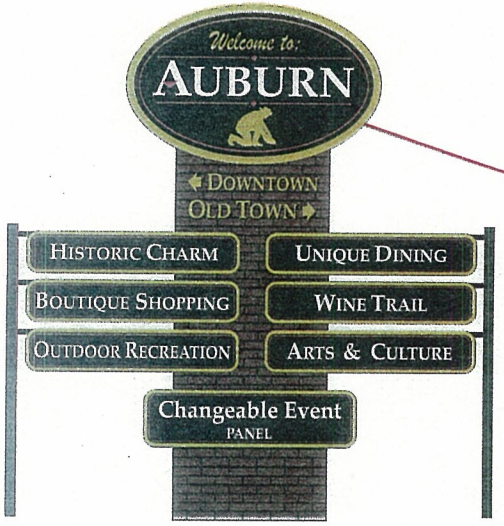
Wayfinding Signage Master Plan – *Proposed Sign*

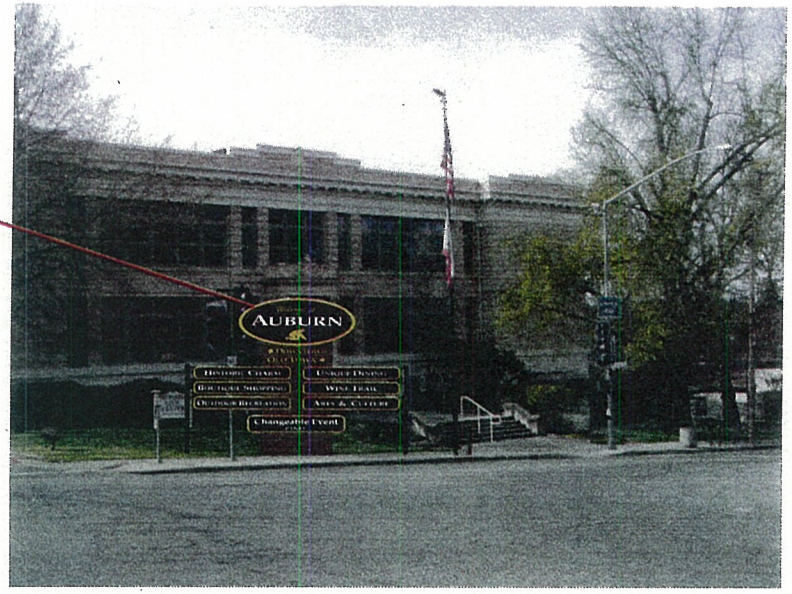
Location: City Hall

Current Situation

- *No Sign*

*Solution: **Install New Signs***





Recommended Content

- *Downtown*
- *Old Town*
- *Historic Charm*
- *Boutique Shopping*
- *Outdoor Recreation*
- *Unique Dining*
- *Wine Trail*
- *Arts & Culture*

Leadership Auburn – 2012

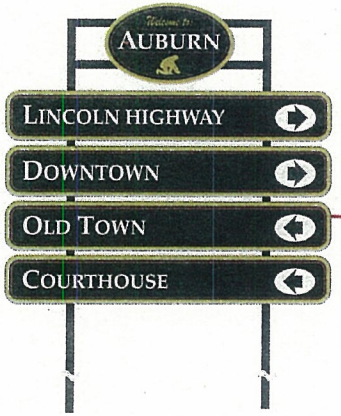
Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: Intersection at City Hall

Current Situation

- *Old sign should be replaced*

*Solution: **Install New Sign and Replace Existing Sign***



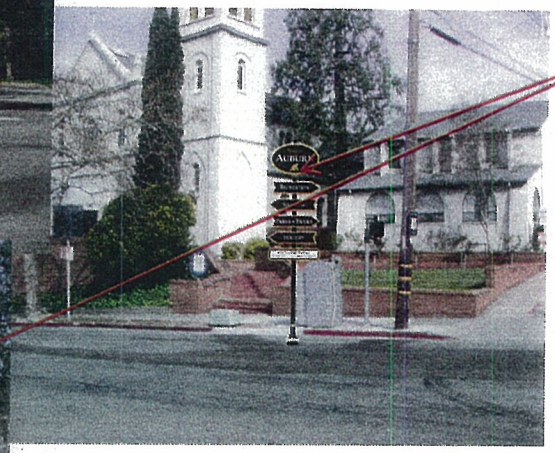
Recommended Content

- *City Hall*
- *Downtown*
- *Fairgrounds*
- *Historic Courthouse*
- *Old Town*
- *Parking*

Leadership Auburn – 2012

Wayfinding Signage Master Plan – *Proposed Street Sign*

Location: Intersection of Lincoln Way and Oakwood



Current Situation

- *No Signs*

OR

*Solution: **Install New Signs***

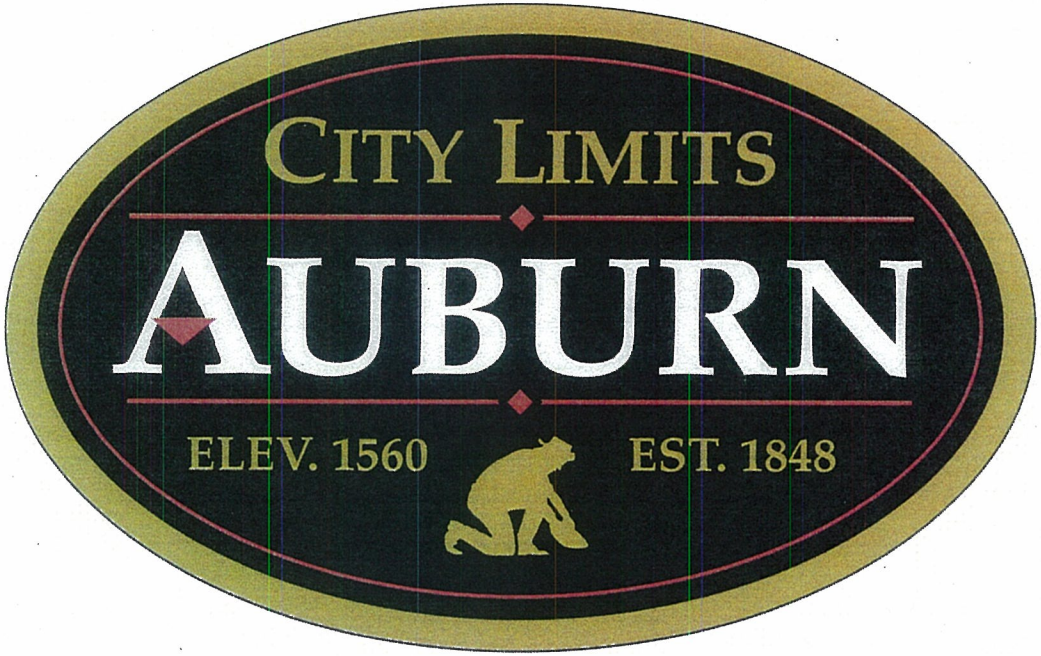
Recommended Content

- *Downtown*
- *Old Town*
- *City Hall*
- *Historic Courthouse*
- *Parking*

Leadership Auburn – 2012

Wayfinding Signage Master Plan – *Proposed City Limits Sign*

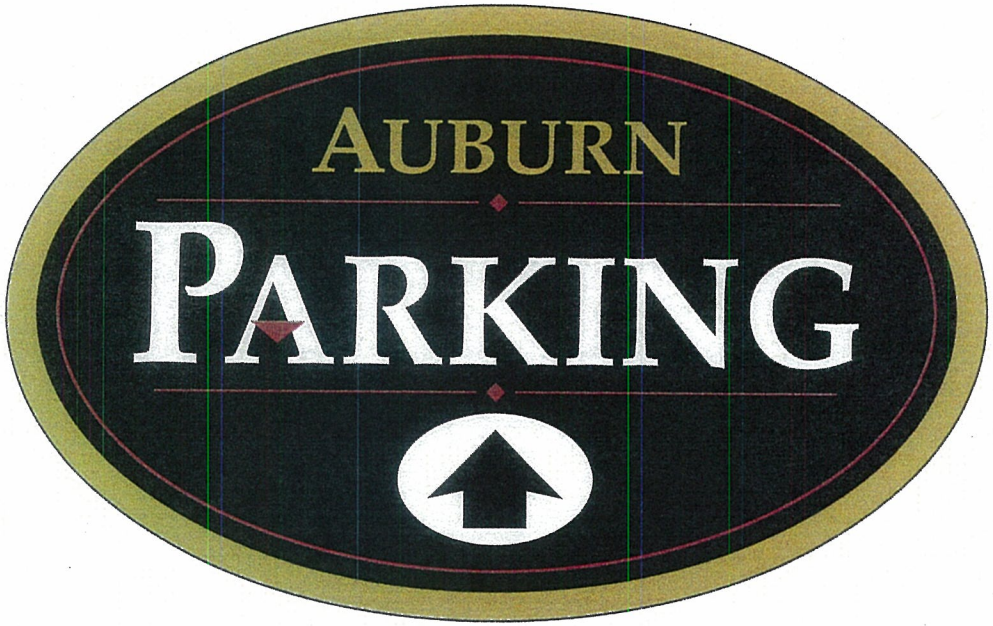
*Solution: **Replace All Existing City Limit Signs***



Leadership Auburn – 2012

Wayfinding Signage Master Plan – *Proposed Parking Sign*

*Solution: **Replace All Existing Parking Signs and Install Additional Signs as needed.***



Leadership Auburn – 2012

Wayfinding Signage Master Plan

FUNDING - Costs

- Total # of Signs = 40 to 80
- Type 1 Sign – estimate $10K to $20K

  Costs could be offset by sponsorship of bricks, donations of materials and volunteer labor.

- Type 2 Signs – $2500 to $4500

  Dependant upon material selected

- Type 3-7 Signs - Varies by specific sign

Leadership Auburn – 2012

Wayfinding Signage Master Plan

FUNDING - Sources

- **Type I Sign**
  - Initial Investment by the "Community"
    - Chamber of Commerce
    - City of Auburn
    - Downtown Business Association
    - Old Town Business Association
  - Brick Sponsorship Program (Chamber)
- **Type 2 – 7 Signs**
  - Ongoing Line Item - Budget Process for:
    - City of Auburn
    - Down Town Business Association
    - Old Town Business Association

COMMUNITY INPUT

In order to gather stakeholder feedback, Leadership Auburn 2012 conducted a publicly noticed "Community Input" workshop on April 26th, 2012. Following are the results of that workshop.

Leadership Auburn – 2012

Wayfinding Signage Master Plan

Community Workshop Feedback – April 25, 2012

Attendees:

Melanie Barton	Placer County Museums
Reese Browning	Old Town Pizza
Bruce Cosgrove	Chamber of Commerce
Gary Estes	Auburn Resident
Lani Johnston	Auburn Home Show
Joe Looney	Act in Your Yard
Michael Otten	Volunteer
Robert Richardson	Auburn City Manager
Linda Robinson	Sun River Clothing Co.
Harvey Roper	Roper's Jewelers
Bernie Schroeder	Auburn Dir. of Public Works
Peggy Seitzinger	Roper's Jewelers
Linda Shuman-Pilns	Gold Co. Media
Bob Snyder	Snyder Sierra

Content Feedback:

- Well done
- Misc. you mentioned some events, you left out others
- Topic signs, i.e. recreation, quality restaurants etc. are too broad; should be limited to major location/site
- Use smaller signs close to specific category, i.e. wine trail, airport
- Limit content
- Pure white
- Gold – brighter
- Would like to see Endurance Capital featured somewhere
- Maybe separate signage as Endurance logo would clutter your nice design
- Also include CA Welcome Center, Fairgrounds, Museums – need to be listed
- Are parking signs going to be separate? What about restrooms?
- Include museums
- Concentrate on developing an overall plan

Location of Signs:

- Well Done
- Adequate and fair
- Don't overdo
- Avoid clutter

Leadership Auburn – 2012

Wayfinding Signage Master Plan

Community Workshop Feedback – April 25, 2012

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Reese Browning	Old Town Pizza
Bruce Cosgrove	Chamber of Commerce
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Linda Robinson	Sun River Clothing Co.
Harvey Roper	Roper's Jewelers
Bernie Schroeder	Auburn Dir. of Public Works
Peggy Seitzinger	Roper's Jewelers
Linda Shuman-Pilns	Gold Co. Media
Bob Snyder	Snyder Sierra

Design of Signs:

- Outstanding
- Although very appealing design, the directions (arrows) need to be more prominent, especially for out of town drivers.
- Prefer oval and mixed with rectangle
- Arrows need to be longer to be more visible
- Longer white oval and arrow
- Too busy, too much information
- Best Day & Night visibility

Funding:

- Volunteer projects set up for different groups
- DBA, OTBA, Chamber, City, County?
- Grants, fundraisers, the area businesses with signs fund their portion of their sign
- Initial "buy-in" from all proposed districts then incremental buy in over time so district can add to their budgets.
- Enlist the whole community

Leadership Auburn – 2012

Wayfinding Signage Master Plan

Community Workshop Feedback – April 25, 2012

Attendees:

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Reese Browning	Old Town Pizza	Linda Robinson	Sun River Clothing Co.
Bruce Cosgrove	Chamber of Commerce	Harvey Roper	Roper's Jewelers
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Lani Johnston	Auburn Home Show	Peggy Seitzinger	Roper's Jewelers
Joe Looney	Act in Your Yard	Linda Shuman-Pilns	Gold Co. Media
Michael Otten	Volunteer	Bob Snyder	Snyder Sierra

Other Thoughts:

- Brick base for City Hall Sign
- Lighting
- Walking, biking, running, horse, auto, RV's
- Maintenance (repair or replace?)
- Great project
- Event signs – very touchy, often there are multiple events during a specific time, you need to be able to meet all needs
- Fairgrounds – have its own event sign w/event funding the event sign
- Incorporate past leadership classes in this project
- Event sign – should have Auburn App Info.
- There are reflective surfaces that can be used on signage to be more visible
  – see "Downtown Auburn" lettering by the clock tower
- Include sign plan for whole 'city' area including county
- Plan for at least 20 year life
- Follow ADA – font, color, etc.
- Use research done elsewhere, see International Signage, tie in with U.S. Dept. of Transportation and Caltrans signage requirements.
- Keep it simple, tie in with other signage – Auburn State Recreation Area
- Fairgrounds sign very prominent
- Event signs – competing events
- Fairgrounds has its own sign and that it pays for, may be some funding , invite to Home Show
- Readability standards for signs "are they readable"
- Science/studies, driving vs. walking, concern with color & font style – scale (big doesn't mean legible
- Trade-off – look/branding with legibility
- Same concern – too much information for drivers, stacked signs are cluttered; consolidated/simpler, example: Folsom
- What is expected lifespan?
- Not just the city – county should be brought in

Leadership Auburn – 2012

Wayfinding Signage Master Plan

Community Workshop Feedback – April 25, 2012

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Lani Johnston	Auburn Home Show
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Michael Otten	Volunteer
Robert Richardson	Auburn City Manager
Linda Robinson	Sun River Clothing Co.
Harvey Roper	Roper's Jewelers
Bernie Schroeder	Auburn Dir. of Public Works
Peggy Seitzinger	Roper's Jewelers
Linda Shuman-Pilns	Gold Co. Media
Bob Snyder	Snyder Sierra

Other Thoughts:

- OTBA – obscure location/tunnel (add)
- Busy, too many words (Old Town billboard – no more than 7 words)
- Uplighting – "great foundation"
- Color does stand out but simulations?
- Gold – is that effective or too muted
- Be careful regarding time of day
- Look at studies and reports, Glendale, International / language view
- Endurance Capital of the World branding
- Next? Future? 49 Corridor, Airport
- Loves the City Hall sign – gold on black harder to read – "Welcome to..." nighttime, seasonality (hard to read)
- Reflective
- Walk/drive/bike considerations
- Simulate brick sponsorship – consider

Sign Legibility Rules Of Thumb

UNITED STATES SIGN COUNCIL

SIGN LEGIBILITY

By Andrew Bertucci, United States Sign Council

Since 1996, the United States Sign Council (USSC) and its research arm, the United States Sign Council Foundation (USSCF) have funded an extensive array of studies into the legibility of on-premise signs and the manner in which motorists react to these signs in various roadside environments. Because of these ground breaking studies, it is now possible to determine, with a degree of certainty, the size of letters as well as the size of signs necessary to ensure motorist legibility. Most of this work has been synthesized in the current USSC publication entitled ***USSC Best Practices Standards for On-Premise Signs***, which details methods for ascertaining sign size, legibility, and height for on-premise signs that are directly in view of a motorist approaching the sign. In addition, a study completed in 2006 and entitled ***On-Premise Signs, Determination of Parallel Sign Legibility and Letter Heights*** now provides similar methods for ascertaining legibility factors for signs not directly in view, such as wall mount building signs usually parallel to a motorist's viewpoint.

The USSC Best Practices Standards and the parallel sign study offer relatively detailed analysis of the legibility factors involved with on-premise signs, and certainly should be utilized whenever such analysis is warranted. A number of equally useful generalizations, or time-saving rules-of-thumb based on the studies, however, can be applied to arrive at results which reflect legibility values which can be used as a general average applicable to most conditions. These are detailed below.

On Premise Sign Legibility Simplified Rules Of Thumb

How Motorists React To Signs In The Roadside Environment

Detecting and reading a roadside on-premise sign by a motorist involves a complex series of sequentially occurring events, both mental and physical. They include message detection and processing, intervals of eye and/or head movement alternating between the sign and the road environment, and finally, active maneuvering of the vehicle (such as lane changes, deceleration, and turning into a destination) as required in response to the stimulus provided by the sign.

Complicating this process is the dynamic of the viewing task, itself, involving the detection of a sign through the relatively constricted view provided by the windshield of a rapidly moving vehicle, with the distance between the motorist and the sign quickly diminishing. At 40 miles per hour, for example, the rate at which the viewing distance decreases is 58

feet per second, and at 60 miles per hour, it becomes an impressive 88 feet per second. Further complicating the process is the relative position of the sign to the eye of the motorist, whether directly in his/her field of view (perpendicular orientation), or off to the side and turned essentially parallel to the motorist's field of view (parallel orientation).

Research has now been able to quantify the viewing process and set a viewing time frame or viewing window of opportunity for both types of sign orientation. In the case of signs perpendicular to the motorist, this time frame is measured as Viewer Reaction Time (VRT), or the time frame necessary for a motorist traveling at a specific rate of speed to detect, read, and react to a sign within his/her direct field of vision with an appropriate driving maneuver. The driving maneuver itself can entail a number of mental and physical reactions, usually involving signaling, lane changes, acceleration and/or deceleration, and finally, a turn into the site of the sign.

In the case of signs parallel to the motorist's view, detecting and reading a sign is generally restricted to quick sideways glances as the sign is approached and the angle of view becomes more constricted. Because of this, the VRT involving these signs is, at best, necessarily compromised. Compensation for this reduction in the time frame involved in detecting and reading parallel signs is made through increases in letter height and size designed to facilitate rapid glance legibility. It must be understood however, that the parallel orientation will always present legibility problems, and in many cases, even if the sign is detected and read, sufficient time for a motorist to complete a driving maneuver in response to the sign may not be available.

Perpendicular Signs

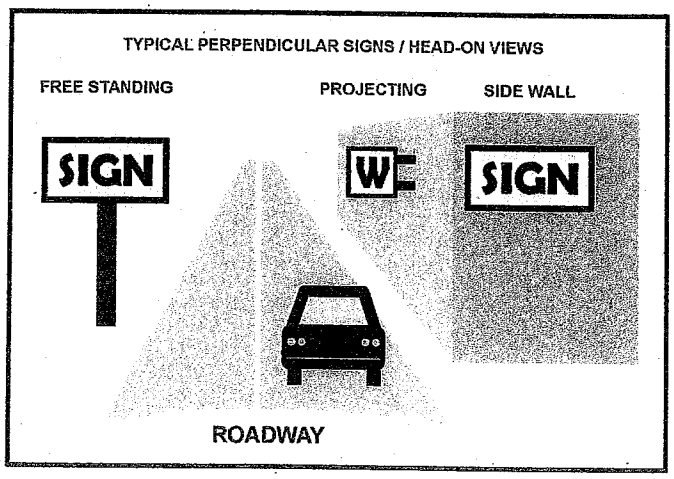


Figure 1. Perpendicular Sign Types

Perpendicular signs include most free standing signs, projecting signs, and, in some cases, flat wall signs placed on building walls that directly face on-coming traffic. (see figure 1). These signs are generally placed close to property lines and fall into the motorist's so-called "cone of vision", which is a view down the road encompassing ten degrees to the right or left of the eye, or twenty degrees total view angle. Signs falling within this cone can usually be viewed comfortably without excessive eye or head movement, and generally can be kept in the motorist's line-of-sight from the time they are first detected until they are passed. (see figure 2, cone of vision).

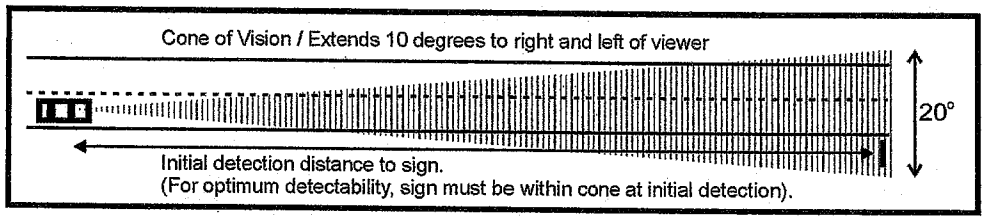


Figure 2. Cone of Vision

Because of this relatively constant view window, perpendicular signs can be designed and sized to provide for viewing time sufficient to allow for adequate detection, reading, and driving maneuvers. The key to providing adequate viewing time is an understanding of Viewer Reaction Time and Viewer Reaction Distance, and how these factors can be computed to provide for adequate letter heights and sign sizes under varied traffic conditions and vehicle speeds.

Viewer Reaction Time / Viewer Reaction Distance

Viewer Reaction Time is simply the time necessary for a motorist to detect, read, and react to the message displayed on an approaching on-premise sign that lies within his or her cone of vision. The USSC Guideline Standards offer precise mathematical procedures for calculating VRT for specific signs with specific copy located in varied locations of increasing traffic complexity and speed.

As a rule-of-thumb for average usage with signs displaying six words of copy (or 30 letters) or less however, VRT for vehicles traveling under 35 miles per hour in simple two to three lane environments can be estimated at eight (8) seconds; for vehicles traveling over 35 miles per hour in more complex four to five lane environments, at ten (10) seconds; and for vehicles traveling over 35 mph in high speed multi-lane environments at eleven to twelve (11-12) seconds.

These values include a maneuvering time of 4 seconds in the simple environment, 5 seconds in the complex environment, and 6 seconds in the high speed multi-lane environment. Although most roadside on-premise sign installations require a motorist to make the driving maneuver before the sign is passed and thus require the full VRT value, occasionally the maneuver can safely be made after the sign location has been passed. Where this is the case, the driving maneuver time of either 4, 5, or 6 seconds should not be included in computing Viewer Reaction Time.

Once VRT is ascertained, Viewer Reaction Distance for a given sign location, or the distance in feet which a vehicle travels during the VRT interval, can be calculated. It is necessary to know this distance because it determines the size of the letters and the size of the sign necessary for legibility to take place over that distance. It represents, in lineal feet, the distance between the motorist and the sign from the moment he or she has first detected it, and it rapidly diminishes as the motorist closes the distance at speed.

It is calculated by first converting travel speed in miles per hour (MPH) to feet per second (FPS) by using the multiplier 1.47, and then multiplying the feet per second by the Viewer Reaction Time. For example, a vehicle traveling at sixty miles per hour covers eighty-eight feet per second (60 x 1.47 = 88). Eighty-eight feet per second times a Viewer Reaction Time of ten seconds equals eight hundred eighty feet (880) of Viewer Reaction Distance. The computation can be expressed also as this equation:

VRD = (MPH) (VRT) 1.47

Determining Letter Height and Sign Size

The overall legibility of a sign is essentially determined by the height, color, and font characteristics of the letters making up its message component. To this end, the USSC has, through extensive research, developed standard legibility indices for typical letter types and color combinations (see table 1, USSC Standard Legibility Index).

The Legibility Index (LI) is a numerical value representing the distance in feet at which a sign may be read for every inch of capital letter height. For example, a sign with a Legibility Index of 30 means that it should be legible at 30 feet with one inch capital letters, or legible at 300 feet with ten inch capital letters. The USSC Standard Legibility Index also reflects the 15 percent increase in letter height required when all upper case letters (all caps) are used instead of more legible upper and lower case letters with initial caps.

Table 1. The USSC Standard Legibility Index

ILLUMINATION	LETTER STYLE	LETTER COLOR	Background COLOR	LEGIBILITY INDEX	
				Upper & Lower Case	ALL CAPS
External	Helvetica	Black	White	**29**	**25**
External	Helvetica	Yellow	Green	**26**	**22**
External	Helvetica	White	Black	**26**	**22**
External	Clarendon	Black	White	**28**	**24**
External	Clarendon	Yellow	Green	**31**	**26**
External	Clarendon	White	Black	**24**	**20**
Internal Translucent	Helvetica	Black	White	**29**	**25**
Internal Translucent	Helvetica	Yellow	Green	**37**	**31**
Internal Translucent	Clarendon	Black	White	**31**	**26**
Internal Translucent	Clarendon	Yellow	Green	**37**	**31**
Internal Opaque	Helvetica	White	Black	**34**	**29**
Internal Opaque	Helvetica	Yellow	Green	**37**	**31**
Internal Opaque	Clarendon	White	Black	**36**	**30**
Internal Opaque	Clarendon	Yellow	Green	**37**	**28**
Neon	Helvetica	Red	Black	**29**	**25**
Neon	Helvetica	White	Black	**38**	**32**

Illumination Variations:

External light source
Internal light source with fully translucent background
Internal light source with translucent letters and opaque background
Exposed neon tube

To use the Legibility Index table to determine letter height for any given viewing distance, select the combination of font style, illumination, letter color, and background color that most closely approximates those features on the sign being evaluated. Then, divide the viewing distance (Viewer Reaction Distance) in feet by the appropriate Legibility Index value. The

result is the letter height in inches for the initial capital letter in upper and lower case configurations, or for every letter in an all caps configuration. For example, if the Viewer Reaction Distance is 600 feet, and the Legibility Index is 30, the capital letter height would be 20 inches (600'/30 = 20").

VRD (in feet) / LI = Letter Height (in inches)

The Legibility Index rule-of-thumb...30

In addition to the use of the Legibility Index chart, a simpler, rule-of-thumb Legibility Index of 30 is frequently used as an average to address most legibility requirements. Although generally acceptable, it should be understood that this is an average only, and it may fall short of meeting the legibility needs of any specific sign or environment. The USSC On-Premise Sign Standards provides a much more precise means of establishing this requirement, particularly for complex environments, and should be used whenever such precision is warranted.

Sign Copy Area and Negative Space – Computing Sign Size

The computation of overall sign size is of vital concern to anyone involved in designing or building on-premise signs, since it relates directly to both sign cost as well as to adherence to local building and zoning ordinances. It is for this reason that USSC has devoted so much research resources into developing methods for computing adequate sign sizes for varied environments, and into providing the industry with the means to compute the size of signs necessary to adequately transmit communicative messages to motorists traveling at different rates of speed. The use of the Legibility Index is the vital first step in this process, but there is frequently more involved than just letter height, especially in perpendicular signs involving the use of background panels. Clearly, in these instances, an understanding of how sign copy area and negative space interact to bring about optimum viewer legibility is critical.

In instances in which only letters comprise the total sign, such as channel letters on building walls, however, the computation of total sign size in square feet is relatively simple. In the case of these types of individual letter signs, overall size is frequently considered as the product of the height of the letters times the length of the line of letters. For example, if capital letter height is two feet, and the line of letters measures thirty feet horizontally, sign size would be calculated at sixty square feet (2 x 30 = 60). There is an important exception to this mode of calculation in which only the space actually taken up by the letters themselves in square feet, and not the space between letters, is considered. In these cases, overall size becomes simply the sum of all the individual letter areas, and is generally a fairer method of computation when the letters and or/symbols

are spread out over a large area of building wall. In any event, for individual letter signs, it is essentially the height of the letters which is the prime determinant of overall sign size, and as we observed above, this can be calculated with some precision through use of the Legibility Index.

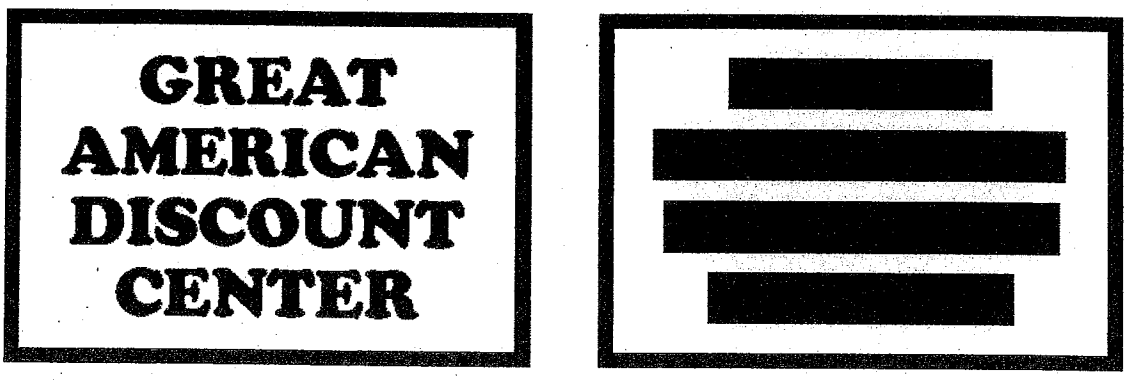
In this context, there is also another useful rule of thumb which can be used to give a working approximation of how much horizontal length a given number of letters would require once the letter height is established by simply multiplying capital letter height by the number of letters. For average fonts, this rule of thumb takes into account the space between letters in a line (usually 1/3 the width of an individual letter and referenced as letterspace) and can give a surprisingly close determination of the actual length of the line of letters.

In the case of signs utilizing background areas, however, computation of the amount of space occupied by the lettering, also called copy area, is only the first step in computing overall sign size. Of equal importance in signs of this type is the amount of negative space surrounding the letters or copy area. It is this negative space which provides the background for the letters, makes legibility possible, and which must be accounted for in any computation to determine overall sign size.

Copy Area

The copy area of a sign is that portion of the sign face encompassing the lettering and the space between the letters (letterspace), as well as any symbols, illustrations, or other graphic elements. It is a critical component of effective sign design because it establishes the relationship between the message and the negative space necessary to provide the sign with reasonable legibility over distance.

Figure 3. Copy Area

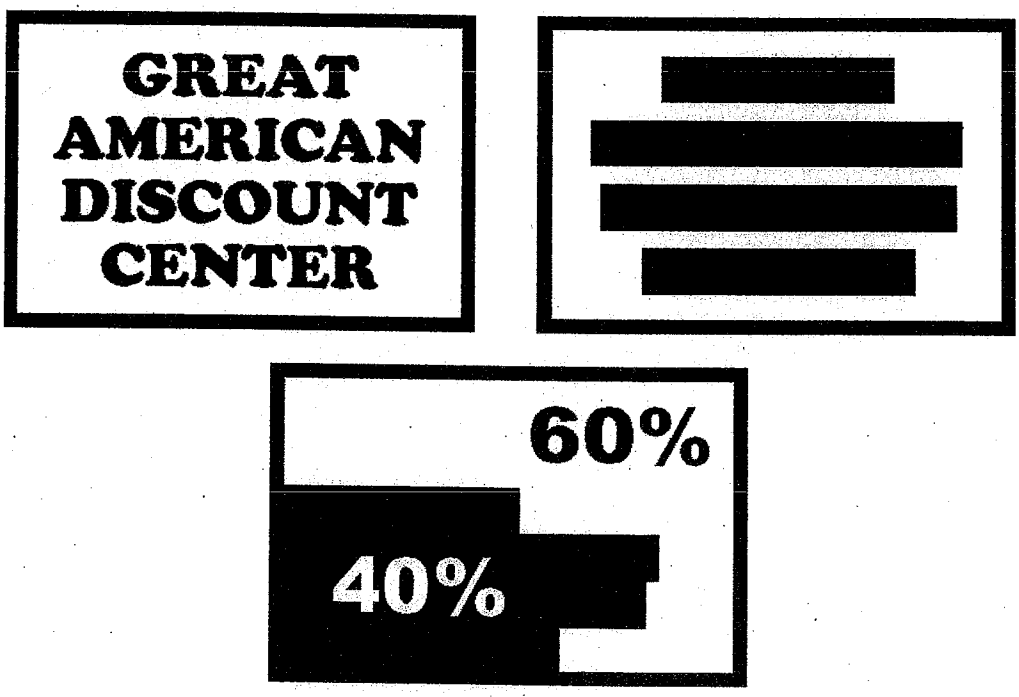


The illustration on the left depicts a typical on-premise sign face; while the one on the right, with black rectangles covering the copy area, affords a visual of the message layout

Negative Space

Negative space is the open space surrounding the copy area of a sign. It is essential to legibility, particularly in signs in which the copy is displayed within a background panel. Negative space ideally should not be less than 60 percent of the sign or background area. This requirement for a 40/60 relationship between the copy area and negative space is the minimum USSC standard. It is intended only to establish a measurable baseline for the negative space component of a sign, such that a reasonable expectation of legibility will exist.

Figure 4. Relationship Between Copy Area And Negative Space



The bottom sign panel illustrates how the aggregate copy area comprises 40 percent of the total sign panel area, with the remaining 60 percent forming the negative space area.

DETERMINING SIGN SIZE – Calculation Methodology

The size of a sign is determined by the size and length of the message and the time required to read and understand it. It can be calculated once the numerical values of the five size determinants –Viewer Reaction Time, Viewer Reaction Distance, Letter Height, Copy Area, and Negative Space – have been established.

The step-by-step process to determine sign size, which is explained below, is useful not only as a calculation method, but also as a means of understanding the elements involved in the calculation.

Area of Sign / Computation Process:

1. Determine speed of travel (MPH) in feet per second (FPS): (MPH x 1.47).
2. Determine Viewer Reaction Time (VRT).
3. Determine Viewer Reaction Distance (VRT x FPS).
4. Determine Letter Height in inches by reference to the Legibility Index (LI): (VRD/LI).
5. Determine Single Letter Area in square inches (square the letter height to obtain area occupied by single letter and its adjoining letterspace).
6. Determine Single Letter Area in square feet: Single Letter Area in square inches/144).
7. Determine Copy Area (Single Letter Area in square feet x total number of letters plus area of any symbols in square feet).
8. Determine Negative Space Area at 60% of Sign Area (Copy Area x 1.5).
9. Add Copy Area to Negative Space Area.
10. Result is Area of Sign in square feet.

Computation Process / Calculation Example

Figure 5. Calculation Example Sign

Location: Complex Driving Environment

Posted Traffic Speed of 40 MPH

Sign Background: White

Sign Copy: 23 Letters, Upper & Lower Case Clarendon Style, Black

Internally Illuminated, Translucent Face

1. Determine speed of travel in feet per second; 40 MPH x 1.47 = 59 FPS
2. Determine Viewer Reaction Time – Complex Environment
   Detection and Message Scan..... 5 seconds
   Maneuver.....5 seconds
   Total Viewer Reaction Time = 10 seconds VRT
3. Determine Viewer Reaction Distance; 59 (FPS) x 10 (VRT) = 590 feet
4. Determine Letter Height in inches - Refer to Legibility Index, Table 1
   Black Clarendon letters on White background = Index of 31
   590 (VRD) / 31 (LI) = 19 inch letter height
5. Determine Single Letter Area in square inches
   19 x 19 = 361 square inches, single letter area
6. Determine Single Letter Area in square feet
   361 / 144 = 2.5 square feet, single letter area
7. Determine Copy Area; single letter area (sq. ft.) x number of letters
   2.5 x 23 = 57.5 square feet, copy area
8. Determine Negative Space @ 60% of sign area
   57.5 x 1.5 = 86.25 square feet, negative space
9. Add Copy Area to Negative Space
   57.5 + 86.25 = 143.75 square feet
10. Result is Area of Sign, 144 square feet

Area of Sign – Equation / Specific Usage

In addition to the computation method above, the USSC has developed an algebraic equation to determine the Area (A_{sign}) for signs containing letters only, which will provide the same result but will simplify the process. The equation allows for insertion of all of the size determinants, except for Negative Space, which is fixed at the standard 40/60 ratios. (Note: If numbers are rounded off in the computation process, a very slight difference in result may occur between the computation process and the equation).

$$A_{sign} = \frac{3n}{80}\left[\frac{(VRT)\,(MPH)}{LI}\right]^2$$

Fixed Value:
- 40/60 ratio, letters/negative space

Variable Values:
- Number of Letters (n)
- Viewer Reaction Time (VRT)
- Miles Per Hour (MPH)
- Legibility Index (LI)

Here's how to work the equation:

Start with the first portion of the equation which is three times the number of letters divided by 80. Three times 23 letters is 69; when divided by 80 the result is .8625. Keep this number ready for later use. Compute the second part of the equation in brackets by multiplying VRT (Viewer Reaction Time), which is 10 by the MPH (miles per hour), which is 40. The multiplication product is 400. Divide 400 by the LI (Legibility Index), which is 31, and the result is 12.90. Square the 12.90 by multiplying it by itself (12.90 x 12.90) for a product of 166. Finally, multiply the 166 by the .8625 obtained from the first part of the equation, and the resulting square footage is 143.

Area of Sign – Equation / Broad Usage

To allow for a broader scientific evaluation of sign size and satisfy the minimal legibility requirements across a full range of reaction times and speed zones, USSC has also developed a second more simplified equation shown below. This formula fixes the average sign size determinants, leaving only Viewer Reaction Time (VRT) and the speed of travel (MPH) as the sole variables. It can be used effectively as a broad rule-of-thumb to ascertain the general size of signs necessary to adequately and safely convey roadside information to motorists traveling at a given rate of speed as well as to establish size parameters for signs across an entire community and/or road system. Table 2 below provides a handy look-up reference of the use of the equation.

$$A_{sign} = \frac{[(VRT)(MPH)]^2}{800}$$

Fixed Values:
- 30 Letters
- Legibility Index (LI) of 30
- 40/60 ratio, letters/negative space

Variable Values:
- Viewer Reaction Time (VRT)
- Miles Per Hour (MPH)

Here's how to work the equation,
assuming Viewer Reaction Time of 10 seconds and speed at 50 miles per hour:

Compute the values in the brackets by multiplying the VRT (Viewer Reaction Time) of 10 seconds by the MPH (miles per Hour), which is 50. The multiplication product is 500. Square the 500 by multiplying it by itself (500 x 500) for a product of 250,000. Divide 250,000 by 800 for the resulting square footage of 312.

Table 2. Freestanding Sign Sizes

Freestanding Sign Size in Square Feet

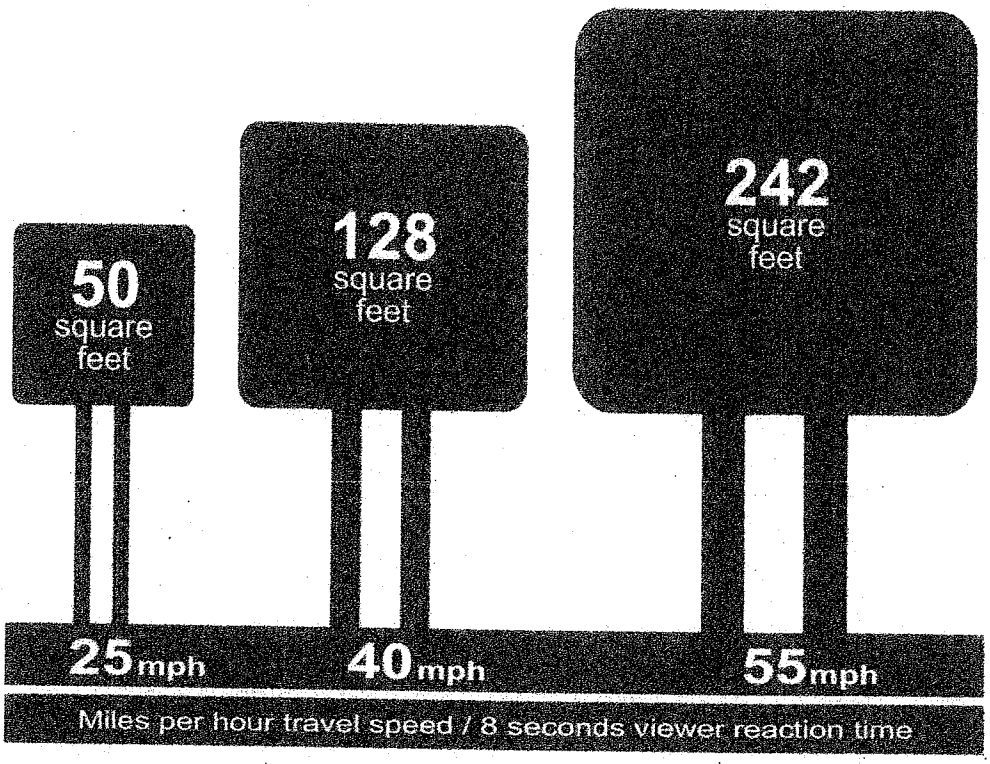
Sign Size (Square Feet) = $[(VRT)(MPH)]^2 / 800$

VRT = Viewer Reaction Time MPH = Miles Per Hour

VRT varies with roadside complexity:

simple or 2 lane = 8 seconds / complex or 4 lane = 10 seconds / multi lane = 11 seconds

MPH	Road Complexity	VRT	Sign Size
25	simple / 2 lane	8	50
25	complex / 4 lane	10	78
30	simple / 2 lane	8	72
30	complex / 4 lane	10	112
35	simple / 2 lane	8	98
35	complex / 4 lane	10	153
40	simple / 2 lane	8	128
40	complex / 4 lane	10	200
45	simple / 2 lane	8	162
45	complex / 4 lane	10	253
50	simple / 2 lane	8	200
50	complex / 4 lane	10	312
55	complex / 4 lane	10	378
60	complex / 4 lane	10	450
65	multi lane	11	639
70	multi lane	11	741
75	multi lane	11	850



Average sign size related to speed of travel and reaction time

Illustration from *Street Graphics and the Law*,
American Planning Association, 2004

Parallel Signs

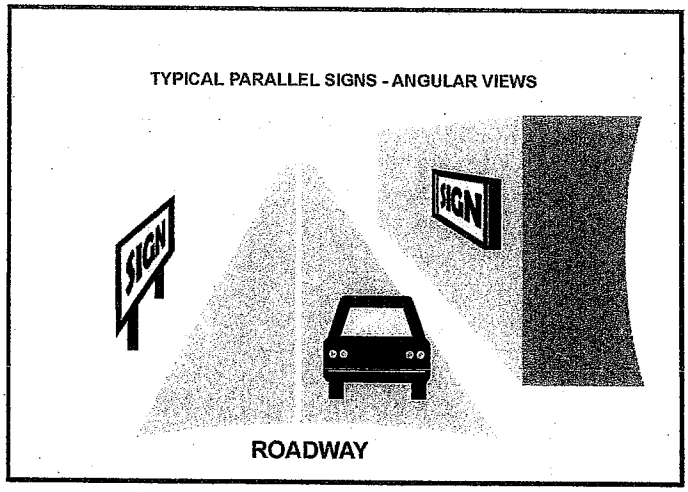


Figure 6. Parallel Sign Types

Everyday experience teaches us that parallel signs are more difficult to read than perpendicular signs simply because their orientation to the eye of any observer is at an acute angle. Now USSC research has corroborated this subjective impression with scientific evidence, and has made it possible to construct a mathematical model and attendant equations to account for the size increases necessary to allow parallel oriented signs to achieve at least some measure of the legibility quotient of perpendicular signs in a motorist oriented environment.

Parallel signs are harder to read because their orientation, or tilt, with respect to the driver makes it impossible to see the sign face at certain distances and offsets. When the driver can see the sign face, the content is often foreshortened and distorted. The driver must get close to the sign in order to increase the viewing angle to the point where the sign becomes legible. However, as drivers approach the sign, the time they have to read it gets shorter, while the sign moves further into their peripheral vision.

This condition places parallel signs at a threefold disadvantage relative to perpendicular signs. First, they are inherently more difficult to read because of the foreshortening of the message content caused by the angle of view. Second, because they become legible only after the angle of view exceeds 30 degrees, the time frame during which legibility can take place is compressed, and third, because they are usually placed back from the roadside well outside a driver's cone of vision, they are viewed by drivers only during short sideway glance durations, usually measured in fractions of seconds.

In many cases, their orientation causes not only severely compromised legibility compared to perpendicular signs, but results in the sign not being seen at all. In the USSC study, *Real World On-Premise Sign Visibility,* in which people were asked to drive through typical suburban shopping areas and locate specific signs, perpendicular signs were almost never missed while the subjects drove past 30 percent of the parallel signs, even though the parallel signs were two and three times larger than the perpendicular signs and the drivers were actively looking for them.

Parallel signs, therefore, must be read using a series of very quick glances at large visual angles during small windows of opportunity. Because of this, letter heights developed for perpendicular signs, where drivers have more time and can take longer straight ahead glances, cannot provide for adequate parallel sign legibility.

As we have noted in the case of perpendicular signs, the minimum distance at which a sign must become legible is a function of the time it takes to read the sign and the decisions and maneuvers required to comply with the sign. This is the Viewer Reaction time (VRT), which when combined with the speed of travel, becomes the Viewer Reaction Distance (VRD). Given the VRD, a perpendicular sign's letter height can be calculated using the Legibility Index.

The legibility of parallel signs, however, depends not on a driver's line of sight to a sign down the road, but rather when the sign becomes visible to the driver at a sight angle sufficient to allow at least some glance legibility to take place. A significant amount of research has now determined that this angle should be no less than 30 degrees to the driver's line of sight, and it is the visual restriction imposed by this angle, along with the number of lanes of travel, and the sign's offset from the curb, which determines the Maximum Available Legibility Distance, (or MALD) for a given parallel sign

While traversing this distance, however, a driver cannot be expected to register much more than a few quick glances at the sign without adversely affecting his/her view of the road. Thus it is essential to optimize reading speed for parallel signs in order to minimize the duration and frequency of glances that drivers must make to read the sign. Research has shown that reading speed increases to its maximum as letters are enlarged by a factor of three, and then tends to level off; and to ensure adequate letter height for parallel signs, a multiplier of three is used in the mathematical model to determine the letter heights and the legibility index for parallel signs.

Using this multiplier of three as a benchmark or rule of thumb, the Legibility Index for parallel signs falls to 10, instead of the Legibility Index of 30 we have shown as a rule of thumb for perpendicular signs. Thus a

parallel sign with a MALD of 500 feet, for example, would require a capital letter size of 50" (500/10=50). Conversely, a perpendicular sign at the same location, but directly viewable 500 feet down the road, would require a capital letter size of 17" (500/30=17)

Equations and Lookup Table

The following equations can be used to determine appropriate letter heights for parallel mounted signs given the number of lanes of travel and the lateral offset of the sign from the curb. Equation #1 uses an average LI of 10, while Equation #2 allows users to input the LI that most closely matches their sign conditions from the USSC Legibility Index table (Table 1) and applies the three times threshold constant to that LI. A parallel sign letter height lookup table is also provided for typical roadway cross-sections and lateral sign offsets (Table 3).

When using the equations or the lookup table always use the maximum number of lanes on the primary target road.

Parallel Letter Height Model Equations

Equation #1: LH = (LN x 10 + LO) / 5

Equation #2: LH = (LN x 10 + LO) / (LI / 6)

where:

LH is letter height in inches.

LN is the number of lanes of traffic.

LO is the lateral offset from curb in feet.

LI is the legibility index from Table 1

Examples of how to work the equations

2-Lane Roadway
Lateral offset is 37 feet from the curb.
User does not know the letter style.

Equation #1: LH = (LN x 10 + LO) / 5

LH = (2 x 10 + 37) / 5
LH = 57 / 5
LH = 11.4 inches

Same scenario, but user knows the sign is: Externally Illuminated, Helvetica, all Caps, Light Letters on Dark Background
(USSC LI = 22 ft/in)

Equation #2: LH = (LN x 10 + LO) / (LI / 6)

LH = (2 x 10 + 37) / (22 / 6)

LH = 57 / 3.67
LH = 15.5 inches

Table 3. Parallel sign letter height lookup table.

	Letter Height in Inches				
	Number of Lanes				
Offset from Curb (ft)	1	2	3	4	5
10	4	6	8	10	12
20	6	8	10	12	14
40	10	12	14	16	18
60	14	16	18	20	22
80	18	20	22	24	26
100	22	24	26	28	30
125	27	29	31	33	35
150	32	34	36	38	40
175	37	39	41	43	45
200	42	44	46	48	50
225	47	49	51	53	55
250	52	54	56	58	60
275	57	59	61	63	65
300	62	64	66	68	70
325	67	69	71	73	75
350	72	74	76	78	80
375	77	79	81	83	85
400	82	84	86	88	90